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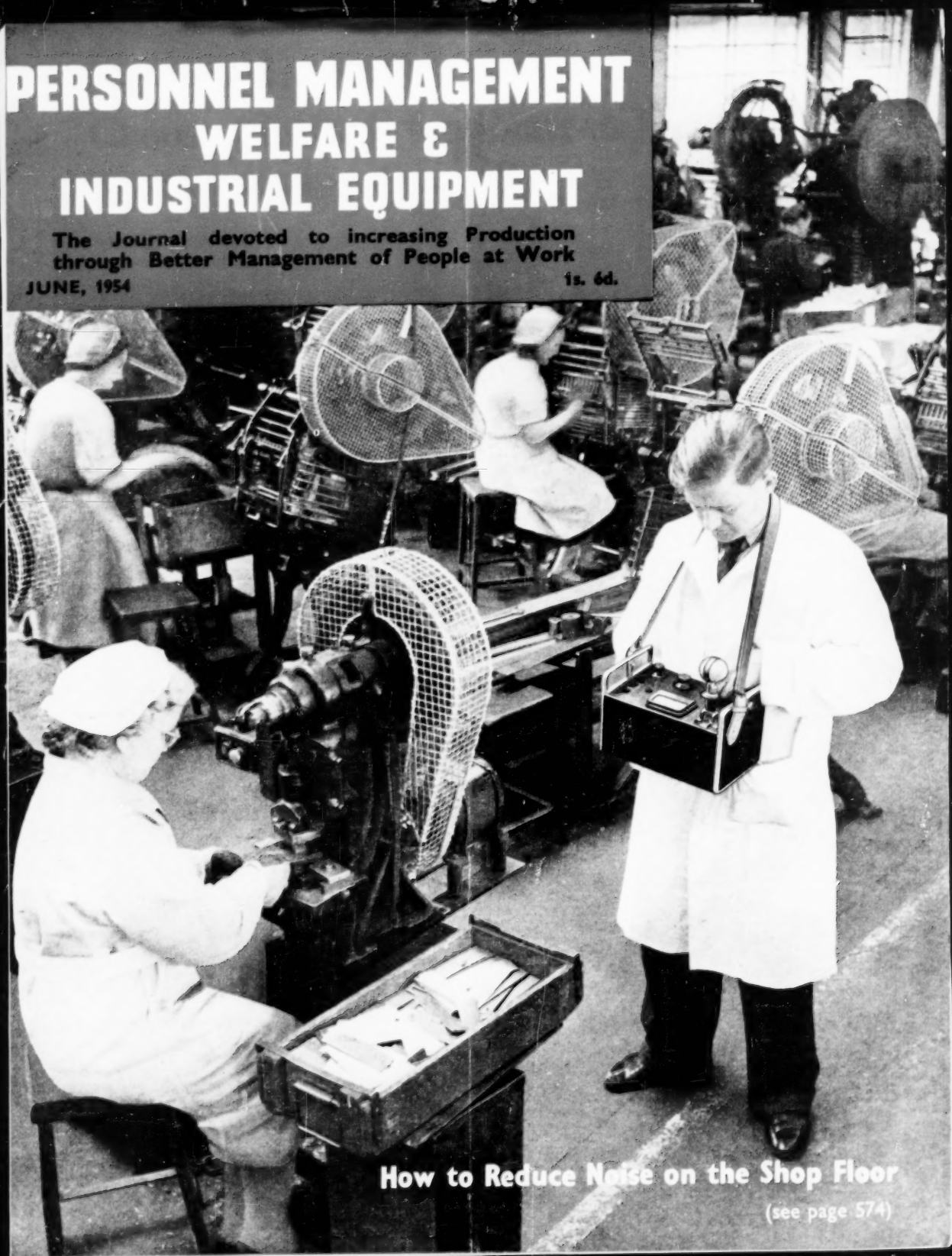
WELFARE & INDUSTRIAL EQUIPMENT

The Journal devoted to increasing Production through Better Management of People at Work

JUNE, 1954 1s. 6d.



How to Reduce Noise on the Shop Floor

(see page 574)

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Sound cont.. by CULLUM

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The kitchen of the staff canteen
terloo Station (SR) is
d by Carron. Here is
Gas-heated Central Range
4 externally heated ovens,
" wide x 14" high x 24"
side. To the right is the
Gas Pastry Oven having
oors and pilot jet to each
Two Carron Gas-heated
g Ovens were also
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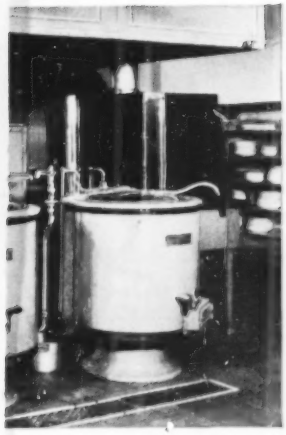

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A21

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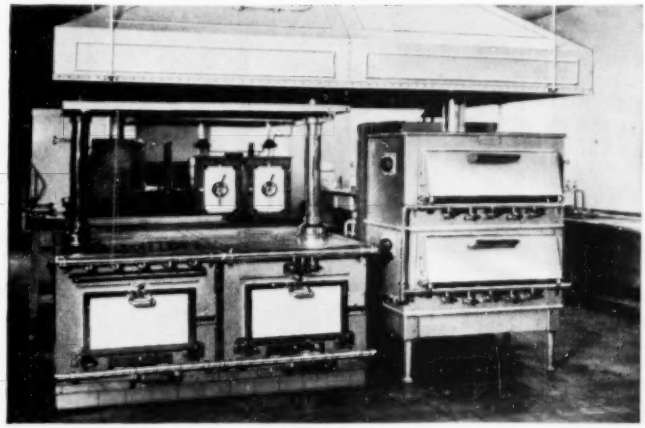

The kitchen of the staff canteen at Waterloo Station (SR) is equipped by Carron. Here is seen a Gas-heated Central Range having 4 externally heated ovens, each 24" wide x 14" high x 24" deep, inside. To the right is the Carron Gas Pastry Oven having drop doors and pilot jet to each burner. Two Carron Gas-heated Steaming Ovens were also supplied.

... British Railways do

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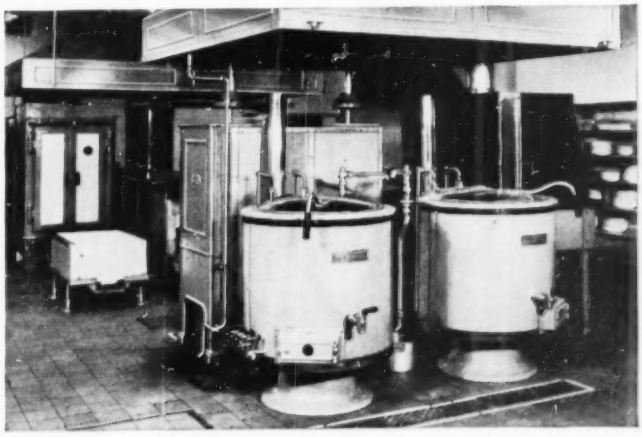

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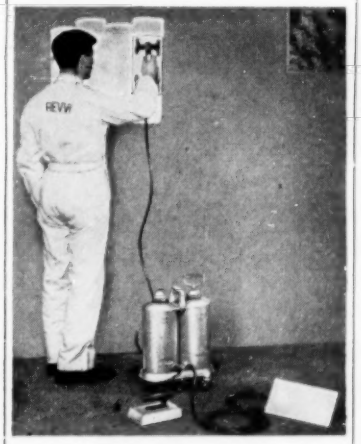

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Personnel Management Welfare and Industrial Equipment

CONTENTS FOR JUNE 1954

MANAGEMENT OF PERSONNEL

How A Small Textile Firm Introduced Work Study *G. J. P. MOORHEAD* 571

Management Through The Supervisor's Eyes
Should Some Problems Be Left To The Workers? *DISCUSSION LEADER* 581

INDUSTRIAL EQUIPMENT AND MANAGEMENT

Reducing Noise In Industry—2
How To Control That Shop Floor Din *G. WITTENBERG, A.M.I.Mech.E.* 574

Equipment That Raises Output ... 589
Heating ★ Safety ★ Lighting ★ Canteen ★ Hygiene ★ Efficiency Aids

WELFARE, TRAINING AND HEALTH

How To Finance A Housing Plan For Workers *A. H. HAYNES, F.W.I.* 582

SAFETY AND ACCIDENT PREVENTION AND CIVIL DEFENCE

Progress In Industrial Civil Defence ... *A. G. H. BREND* 578

Report On The RoSPA Conference ... *ROBERT McKINNON* 580

CANTEENS AND CATERING

How Washing-Up Is Made Swift, Easy And Efficient
R. BURNETT-HUGHES 585

NEWS AND READERS' SERVICE

Current Personnel and Production Practice Digest ... 576
Personnel News Bulletin ... 584
Canteen Advice Bureau ... 586
Management Bookshelf ... 593
Summary of Official Publications ... 594
Management Diary For June ... 595

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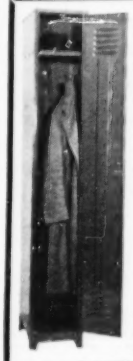

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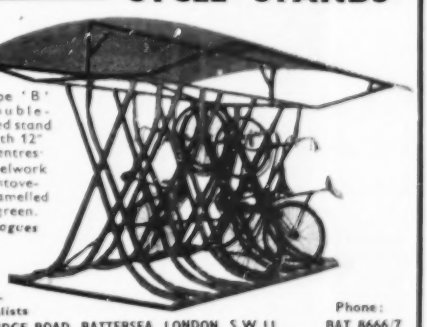

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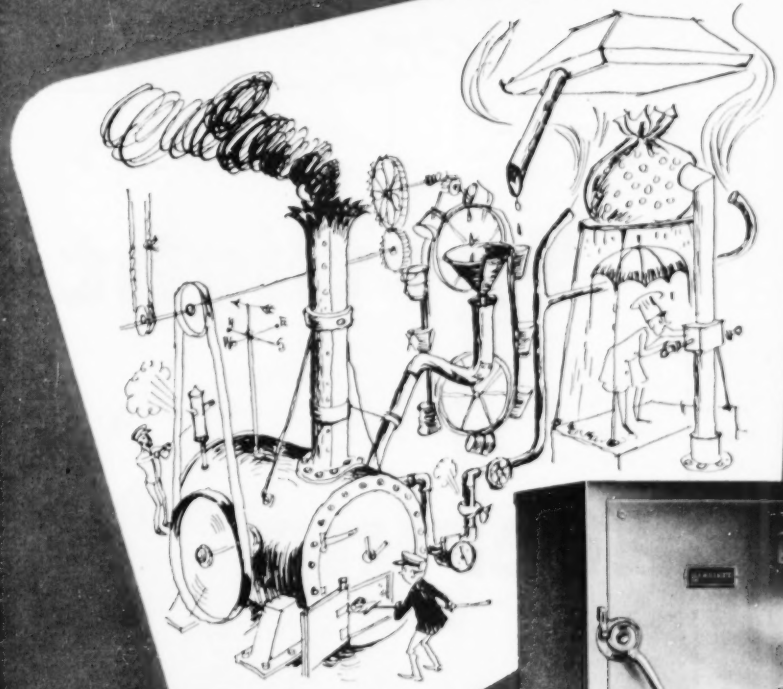

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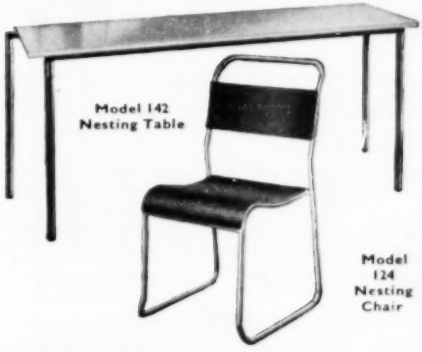

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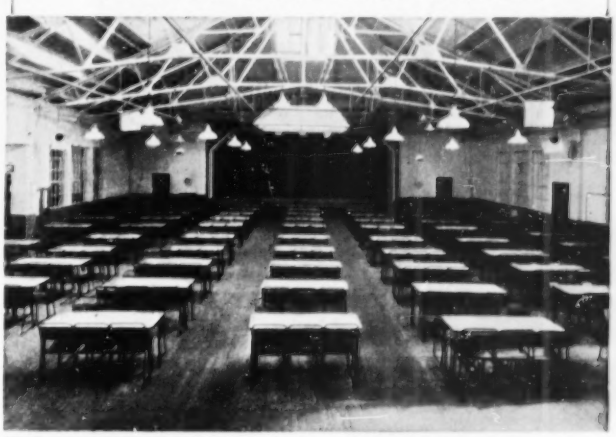

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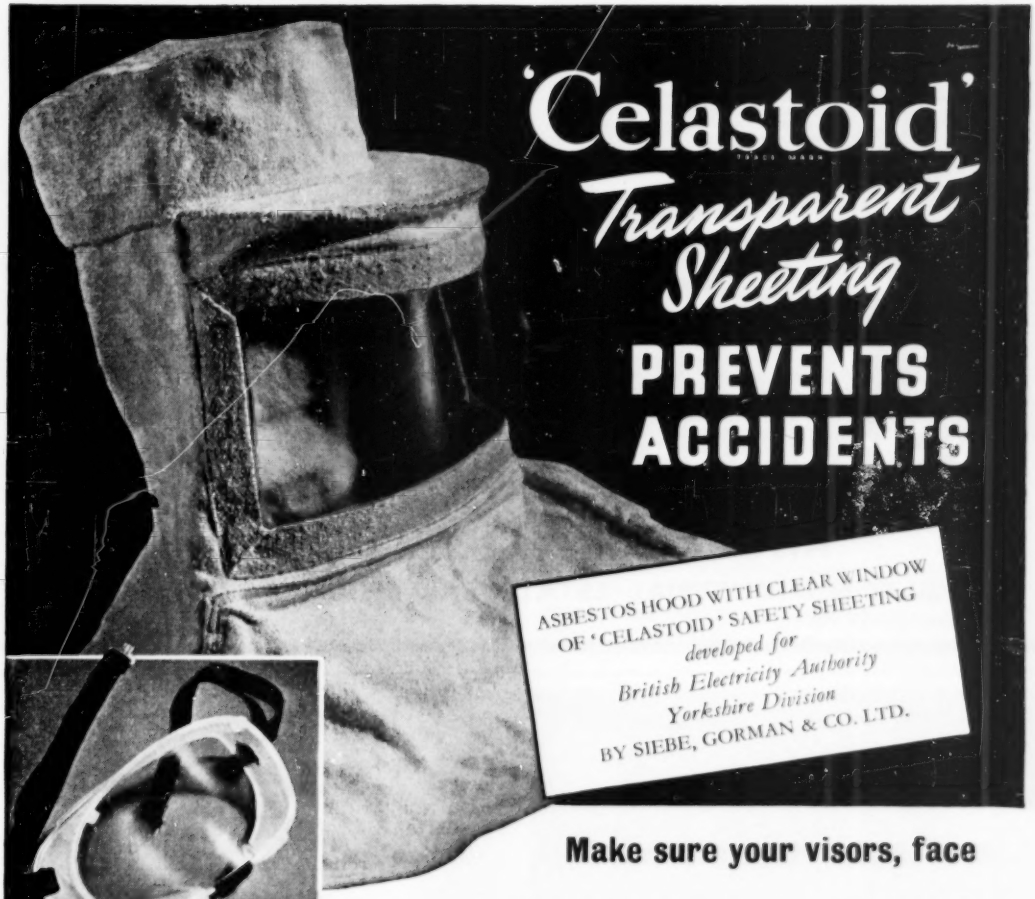

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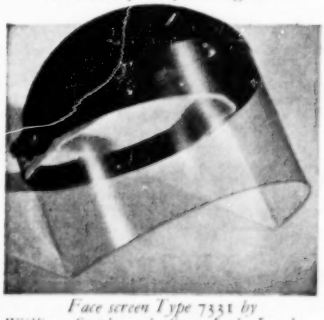

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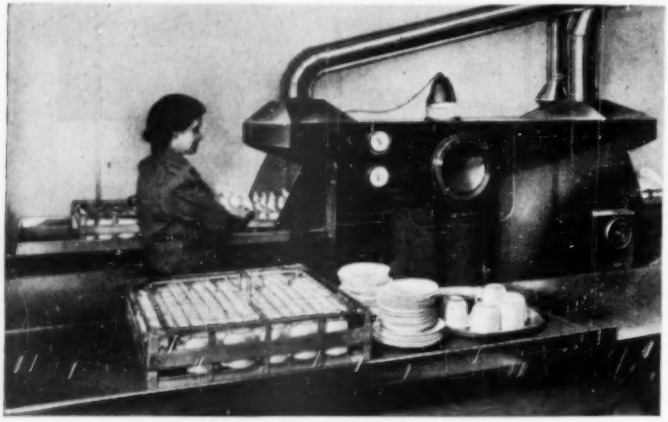

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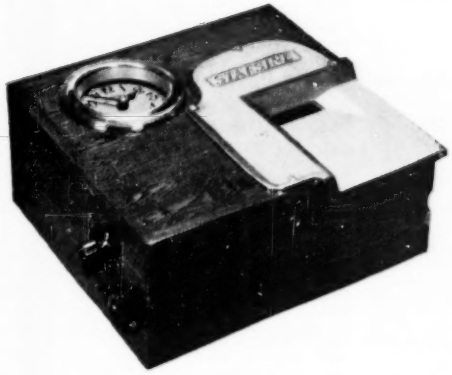

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It is by no means always an easy matter to win people over to the idea of work study. Just as the labour force is often suspicious, the management is sceptical. And this despite the undoubted benefits that work study has brought. Here, then, is an actual case history of how one small firm introduced work study and how it resulted in better wages and higher output for lower costs. The author's summing-up is that no small firm can afford to be without work study.

How a Small Textile Firm Introduced Work Study

By G. J. P. MOORHEAD

Management Consultant, F. B. Trethewey Ltd.

DESPITE the increasing publicity which has been accorded to work study in recent years, many people are still extremely cautious in considering its application to their own organisations. This is often especially true of the smaller firms in British industry.

There are many people who still consider work study as a rather new-fangled idea which, although it may have achieved one or two flash-in-the-pan results, is not to be considered seriously in relation to their own firms. This attitude, coupled with the erroneous idea that only a large-scale concern can afford the financial outlay associated with the introduction of work study, is probably the main reason why comparatively few small firms in this country have adopted this invaluable management technique.

I, myself, spent two years with a small firm in the North West of England helping to install and subsequently maintain work study. My experiences during this period show that not only was work study a practical proposition, but that its introduction coupled with the attendant incentive bonus scheme did more to lower production costs than any other single factor.

Briefly the circumstances leading up to the introduction of work study into the firm were these:

The company, a small one employing just over 100 people, was engaged in the dyeing and finishing of rayon piece-goods. It was typical of many others having a high reputation for quality and good workmanship. At the time trade was good but the incidence of overtime and night-shift working was high. There was also a more or less constant flow of requests for pay increases from one department or another. Moreover, the need for something more precise in labour and cost controls was being felt as competition in the trade increased. In previous discussions on wages with the workers' representatives and the trade union, it had been suggested that an incentive bonus scheme based on Work Measurement be introduced. After due consideration this proposal was accepted and the company called on the services of an industrial consultant.

Before describing the actual application and the results obtained some comment on the snags and human problems inherent in the introduction of work study must be made.

Overcoming Suspicion

In the first place, the consultant's whole method of tackling a job is new and as such is liable to incur the gravest suspicion. Because operatives know that all studies taken may ultimately affect their wage packet, confidence and co-operation are difficult to obtain at first. Another consideration is that even when operatives accept work study in principle, they do not take kindly to being closely observed over long periods. These sort of considerations can give rise to a very delicate problem in human relations during the early stages of an application.

Management may well find themselves in a most unenviable position. On the one hand, they can have an extremely sensitive labour position on their hands and at the same time see little in the way of concrete results from the consultants whose activities are causing the trouble.

In the early stages of any application the consultant must, by the very nature of his work, "hasten" slowly. The teething stages are frequently frustrating and call for a great deal of forebearance and understanding on the part of all concerned. However, in my experience, these initial set-backs were more than compensated for by the final results.

In the factory referred to there were four main production departments: a *Grey-Room* where cloth was batched and measured ready for dyeing, the *Dye-house*, a *Finishing Room* where dyed cloth was dried and pressed prior to going to the *Making-up Room* for measuring, cutting and parcelling ready for despatch to the customer.

The *Making-up Room* was the first department to be tackled by the consultant. At the time it presented something of a bottle-neck in production and employed the highest proportion of labour. On most of the operations in the department a night shift was in operation.

(The parcelling team referred to in the table of performance figures is a typical example of the difficulties which may be encountered in the early stages of an application.)

The job, by its nature, was a difficult one to study. The variation in customers' requirement as to type of paper, labels and fastenings was very great. The operation was entirely manual and considerable changes in layout and team balance were necessary before incentive could be employed. However, the job was ultimately studied and standards were applied. The parcelling team was put on bonus. At first, the response to incentive was disappointing. In fact, for the first five weeks, no bonus at all was earned.

The reasons for this are not hard to find. The consultant had made many minor alterations in methods which at the time the operatives disliked, mainly because they were unused to them. The standards as set called for a very large increase in production yet the team had been reduced. The team were considered both by themselves and by the rest of the works to be a "test case." All were naturally anxious to see what, if any, bonus could be earned under the new system.

To have forced the issue at this stage might well have jeopardised the whole application. Confidence in the standards and co-operation could only be obtained by patience and tact. The consultant was, quite naturally, confident that the standard of production and earnings could be achieved and in this he was fully borne out. Eventually in the sixth week the team began to earn a reasonable bonus.

THE SIX MAIN BENEFITS OF THIS WORK STUDY SCHEME

1. Increased productivity and decreased costs.
2. Increased operative earnings. The average increase in earnings directly attributable to bonus is just over 30 per cent.
3. A labour force whose morale is higher and which is more contented than ever before.
4. A very considerable decrease in overtime working. In the *Making-up Room* it was found possible to dispense completely with the night-shift.
5. Accurate labour and labour cost controls. Performance figures for individual operatives and machines are available daily to management.
6. A firm basis on which to introduce standard costing.

Installation Costs

The actual cost of installing work study cannot be generalised upon. Fees charged by consultants vary as also does the time it takes to install the system. In the application described here, the consultant was in the works for approximately ten months including the period of trade recession referred to above. **The complete cost of application, consultant's fees, cost of changes in layout and new machines was more than recovered, however, in the first full year of working under incentive conditions.**

The running costs of the system are extremely small when compared with the annual savings accruing from it. All clerical work concerned with calculation of bonuses and preparation of labour and cost analyses is performed by one female clerk.

An arrangement has been made with the consultant whereby he pays periodic visits to the works in order to check the administration of the scheme and to study any new machinery or processes which may have been installed. By this arrangement the firm has been enabled to dispense with the services of a highly-paid work study engineer whose specialist services would only be required on a few occasions each year.

Looking back now it is plain that this was the turning point of the whole application. Not only did the team itself become keen, but the interest of the rest of the works was stimulated. Instead of a grudging tolerance of work study, people began to request that their particular job or department should be studied. The test case had been won. It soon became apparent to all that the standards were capable of achievement and that the extra effort was being amply rewarded in the wage packet.

This growing confidence and morale was especially noticeable when the second department, the *Dye-house*, was tackled. Here, in a stronghold of the traditional craftsmen, the consultant had expected to meet his strongest opposition. However, except for minor differences of view-point and opinion, study work proceeded smoothly and the department was applied. It is an interesting reflection on morale that bonus-earning level was reached in the *Dye-house in the very first week* of application. From that point onwards, productivity and bonus earnings increased rapidly.

With the two largest departments applied and earning bonus, the success of the application seemed assured. But there was still one

Work Study is an important item in the management training course run by **Urwick, Orr & Partners Ltd.** at their Slough Training Centre. Here, supervised by a member of the staff, a group of trainees is working out an improved method for a job which has been "studied" under factory conditions.

challenge to be met.

In March, 1952, a minor slump occurred in the textile industry. Although not directly affected, repercussions were felt in the company and the prospect of short-time working loomed ahead. Under these circumstances one might well have expected operatives to wonder whether or not their extra efforts would result in working themselves out of a job.

This, however, was not the case. Despite the fact that work did become short, productivity was maintained. The incentive proved sufficient to overcome the natural fear of short time working. This, in an industry and an area which has had bitter experience of bad times in the past, is highly significant.

The story of the application in the *Grey-room* and *Finishing Room* was very similar. Method study and work-measurement proceeded smoothly and the operatives, conscious of the benefits enjoyed by their fellows, responded rapidly to incentive.

Only a passing reference can be made to the benefits gained from Method Study in this application. In both the *Grey-room* and the *Making-up Room* reductions in staff were directly attributable to improved methods. In the latter department, it was found possible to combine two operations formerly carried out in separate machines. The design and development of a new machine resulted in a net saving of three men and machines.

What then of the original question. Can the Small Firm Afford Work Study? In my opinion there can only be one answer to that question. In fact, it is further contended that the real question which small firms should be asking is not, can we afford work study, but rather can we in the face of ever-growing competition afford to be without it?

Putting the problem in its simplest form — can we reconcile the idea of low productivity and excess costs with survival in the face of daily increasing industrial competition?

THE FIGURES BELOW HAVE BEEN SELECTED AS GIVING A TYPICAL CROSS-SECTION OF THE RESULTS OBTAINED IN THE FACTORY

Work	*BEFORE APPLICATION*			*Nov.-Dec. 1953 (18 months after application)*		
Productivity Concerned	*Productivity*	*Cost per Standard Hr. (pence)*	*No. of Operators*	*Productivity*	*Cost per Standard Hr. (pence)*	*No. of Operators*
Grey-Room	59	39.0	9	98	29.6	8
Dye-House	58	46.6	22	93	37.3	20
Stenter	61	42.1	6	80	40.4	5
Calender	34	77.0	2	87	36.4	2
Press	58	48.5	2	98	34.8	
Parcelling	39	50.4	5	100	22.8	3
Measure and Roll	35	81.0	6	86	34.2	3

A Standard Hour May be defined as an hour's worth of measured work. Thus, by using this terminology, it is possible to compare the performances of different processes or even factories producing different products.

Productivity The ratio of output to input. In this case, the productivity refers to labour only. The index used is related to a base of 100 where 100 is the potential productivity under optimum conditions.

WORK STUDY—THE UNIONS' ATTITUDE

"On the whole, trade unions tend to regard motion and method study favourably and, together with increased mechanisation and other industrial developments, see them as a source of a shorter working week, longer holidays and improved working conditions," said Mr. James Crawford, general president of the National Union of Boot and Shoe Operatives, at the B.I.M. 1954 Scottish Conference held at Gleneagles from April 30 to May 1.

Mr. Crawford was speaking on "The Attitude of Trade Unions to Modern Management Methods" and he stressed that, despite a small minority of voices, trade unions recognised that management must manage and make the final decisions **Where, however, work study and incentive schemes were installed, trade unions expected management to give the same detailed attention to the efficiency and adequacy of machinery, tools, equipment and materials, the quality and ordering procedure, and supply.**

"No one need be surprised," he continued, "if trade unions show little enthusiasm for work study in slum workplaces operating 1890 machinery and where the "boss" disappears in the afternoon for a round of golf or a game of billiards. Work study can only seem superficial in such situations."

Mr. Crawford mentioned that in the footwear industry research was going on with full union support to discover faster methods of working which might be passed on to other methods.

Time study, however, was still regarded by many trade unionists with considerable hostility—and not without cause; but trade unions were increasingly recognising time study, as a systematic approach to price fixing and work load assessment, could serve a useful purpose in industry *provided it was used properly and its limitations were appreciated.*

"Whilst time study may be an improvement on old-fashioned rate-fixing," Mr. Crawford summed up, "it does not give us the whole answer nor can it supersede collective bargaining. I think that what workpeople look for from management is an indication of sincerity."

J. Crawford.

Reducing Noise in Industry—2

How to Control that Shop Floor Din

By G. WITTENBERG, A.M.I.Mech.E.

Nowhere in industry is there so much surplus noise as on the shop floor. Here, in the second article of this series, the author describes in detail various ways of "mopping up" this surplus. Prevention is better than cure, however, so where possible it is always best to start with the cause and reduce noise at source.

ONE fundamental point in all noise reduction is to concentrate on the noisiest sources since to quieten these will effect the biggest reduction for a given expenditure. This point is of such importance that it is worth considering in detail by means of a simple example. If we have one large machine with a noise output of 95 decibels and ten small machines each with an output of 75 decibels, then the total noise level will be 95.4 decibels (decibels, being a logarithmic measure, cannot be directly added). If we reduce the noise of the large machine by 10 per cent., this will reduce the total noise level by about 7.1 decibels. If, however, we reduce the noise emitted by each of the *ten* small machines, we shall reduce the total noise by only about 0.3 decibels and we may well have spent five times as much as would be required to silence the large machine.

It is, therefore, obviously most important to be able to measure sound level exactly. From the point of view of the acoustical engineer, such measurements are indispensable and are normally taken by means of a sound level meter. This instrument consists essentially of a microphone which picks up the sound at any desired point. The sound is then transformed into an electronic signal which is passed through a number of electronic circuits. The actual magnitude of the sound is finally indicated on a meter in terms of decibels. The instruments are simple to operate and are readily portable, but they are essentially scientific instruments. For welfare officers in routine checks, a sound level indicator will do the job just as well. The scale of this instrument is slightly shorter and its sensitivity slightly lower than that of the sound level meter, but its performance is more than ample for all normal industrial uses. It is truly a pocket instrument, measuring no more than an average novel and its low weight enables it to be used in one hand for readings to be taken continuously while walking along the floor of the factory or round a machine.

When considering the question of silencing, it is also important to remember that the amount of noise is governed by three main factors: (1) the actual noise given out by the source (such as machine tools, engines, and so on); (2) the effectiveness of the transmission of this noise to the area involved; and (3) the acoustical properties of the area.

As prevention is better than cure, it is always advisable to start with the cause of the noise and to try to diminish the volume at the source. The transmission of noise in the last two stages can then usually be tackled much more easily and cheaply than would otherwise have been possible.

The first step in reducing noise from a series of machines is, as we have seen already, to determine by means of an instrument for measuring sound level, which is the most noisy. Much can then be done by better balancing and maintenance. Good lubrication will almost always reduce noise and is particularly important since parts running "dry" often emit noises which are very unpleasant to the human ear. The squeak of a rusty lock is proverbially disagreeable.

Lack of robustness will make any noise worse. It is not for nothing that the early cars were known as "tin lizzies." Any sheet metal casing, inadequately supported, will tend to pick up vibrations from nearby mechanisms and to act as a sounding board in transmitting them to the atmosphere. If the casing cannot be isolated from the mechanism, an obvious solution is to stiffen such sheet metal work and particularly to ensure that its natural frequency lies well outside the running frequency of machines in the vicinity. Such strengthening can be carried out by corrugating the surface or by adding ribs or flanges. *It should not be done by increasing the thickness of sheet since this is a most uneconomical method of noise reduction.*

Panels can also be damped by applying suitable coatings and some of the anti-drumming compounds now on the market are very effective. As a temporary measure, normal plastics or shredded asbestos can also be used. An ideal solution, though sometimes expensive, is to make the panel itself of a plastic having good damping properties.

Welded joints which bind all parts into an integral whole tend to be quieter in service than composite riveted joints. Welding itself is much quieter than riveting, which has already been mentioned as a prolific source of noise. Shipyards fabricating welded ships are, in fact, very much quieter than those using conventional techniques.

5 Features of Quieter Working

1. Use a sound meter to find out what is causing the loudest noise. And concentrate on reducing this first.

2. Good machine maintenance and spacing also make for quieter working.

3. Stiffen sheet metal casings by ribs or flanges, and coat them with an anti-drumming compound.

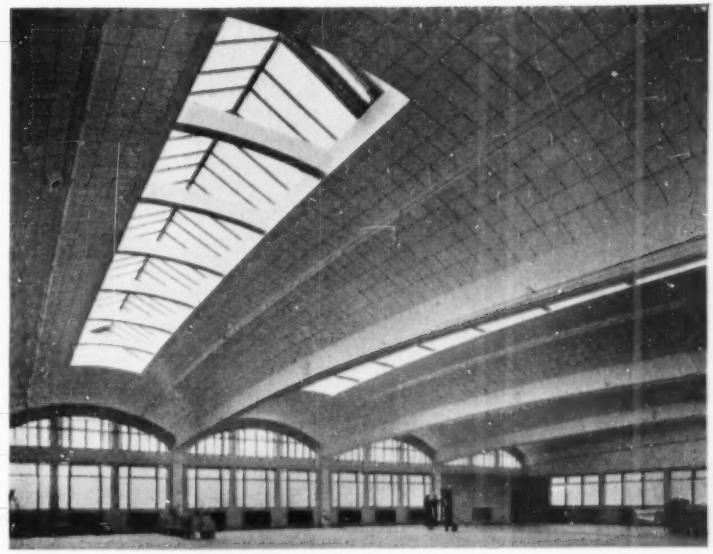
4. Cast materials have good 'damping' capacity. So also have laminated woods, phenolic plastics and rubber surfaces.

5. Ear plugs should be correctly designed and comfortable. Otherwise, the operators will tend not to wear them.

Another substitution of a relatively quiet process for a noisy one lies in the use of a hydraulic press in place of a mechanical one. For technical reasons this is sometimes not possible and the problem is then to minimise the noise from a power press. When there is a choice between two sizes of press, all other things being equal, it is advisable to use the heavier of two presses. It will be found to be quieter because of its inherently greater robustness. Here again, of course, the dictates of machine loading must be considered.

In the sheet metal industry, progressive tooling ensures that sheet is held at a number of points simultaneously and noise is thus reduced. Both here and with single station dies, it is advisable to have the punch member so arranged that the workpiece is engaged smoothly with the "cut" being taken up gradually, if this is at all possible.

It is worth remembering that cast materials normally have good damping capacity, cast iron being excellent in this respect. Densified and laminated woods and phenolic plastics can also sometimes be used in tools to reduce noise. Rubber foaming for aircraft and similar work is also relatively silent.



(Picture by courtesy of Horace W. Cullum and Co. Ltd.)

A number of industrial premises reduce noise by using acoustic tiles made from a material known as "bagasse"—the tough fibre left over after the sugar has been extracted from the cane. Each tile is perforated with hundreds of holes which form tubular channels through which sound waves are absorbed. Nor is the general effect displeasing to the eye, as witness these new offices of **Taylor Woodrow Construction Ltd.** at Southall.

Ear Guards

When it is impossible to quieten a machine down to reasonable limits, ear defenders can always be used as a last resort. **Such defenders should be correctly designed from the acoustical viewpoint and should be comfortable, otherwise operators will tend to avoid wearing them whenever possible.** In particular, men in noisy jobs should be supplied with well-fitting ear plugs or guards rather than be allowed to use home-made plugs of cotton wool. Quite apart from being acoustically poor, such plugs are often not sterile and are prone to introduce dirt and bacteria into the middle ear, which is particularly sensitive to such influences.

Though ear defenders are only a second line of defence, they have the great advantage that operators so protected can be exposed for indefinite periods to very loud noises without their hearing being adversely affected. The defender does, in fact, reduce the noise level at the ear drum to a safe figure.

On engines, the greatest sources of noise are perhaps the air inlet and exhaust. Here much can be done by the judicious use of filters on the inlet and silencers on the exhaust. Piping the exhaust to the outside of the building has the dual advantage of disposing of both the waste products of combustion and the greater part of the unwanted noise.

Having eliminated as much noise as possible at the source, there will still be a residue which it is either technically impossible or uneconomic to reduce further. The procedure then must be to prevent as much as possible of this noise from reaching the workers. The first step should be to isolate machines from the main structure of the factory so that the transmission of noise by the structure is eliminated. Since metals are excellent noise carriers, the obvious step is to provide machines with suitable flexible mountings in which some resilient non-metallic material (such as rubber, felt, cork or even wood) is interposed between the machine proper and the foundation.

It should be emphasised that these mountings must be selected with care to obtain the best results and each case should be considered individually.

Similarly, the transmission of noise through pipes can be reduced, if not eliminated, by inserting a non-metallic gasket into the pipeline. This is perhaps one of the easiest improvements to carry out.

Another excellent reducer of noise is sheer space. Every time an observer doubles the distance between himself and a source of noise, there is a *four-fold* reduction in the sound energy falling on his ear drum. Although the properties of the human ear are such that it becomes more sensitive as the noise level is reduced, it is still true that by moving from 10 ft. to 100 ft. from a source of noise, its loudness will be reduced to approximately one-fourth when it reaches the observer.

There is a further advantage in separating quiet and noisy processes as widely as possible since an operator is much less worried by a noise produced by a machine under his own control than one which is not. Where it is impossible to separate completely the personnel carrying out different functions in a manufacturing unit, they should at least be grouped in a sensible manner. For instance, the press shop might be put at one end of the building, followed by the machine shop, assembly sections, the tool room and finally by the offices.

(Continued on page 583)

"Snobbery Handicaps Our Business"

SAYS LEADING MANAGEMENT CONSULTANT

BRITISH business is being handicapped "by our curious mediaeval snobbery which confuses being amateurish with being a gentleman," said Col. L. F. Urwick, O.B.E., chairman of *Urwick, Orr & Partners Ltd.*, management consultants, at a recent lunch given by the American Chamber of Commerce in London.

"In the twelfth century," he continued, "the knights, being by definition illiterate, kept their accounts by notches cut on sticks, while the clerk (the profesisonal) kept his in writing . . . Today, in business, status and honour go not to the executive who does the job but to the members of the committee who decide what he is to do."

Scientific Approach

Col. L. F. Urwick, O.B.E.

Col. Urwick was speaking on a recent survey he had directed into American management training methods and facilities (see page 593) and was summing up what Britain could learn in this respect from the U.S.A. He was impressed by the determination he found over there to treat business management strictly as a scientific subject and by the great rapidity with which interest in this subject had seized on the imagination of American business. He also stressed the liaison between American business schools and American business, and referred to the lack of interest in business at our two senior universities.

"We have no great institution such as the Harvard Graduate School of Business," stated Col. Urwick. "We urgently need such an institution."

Living the Idea

"The most encouraging part of the picture in the United States," he went on, "is the emphasis they place on practical training within business and the rightful importance of persuading every superior that one of his most important duties is to coach his subordinates sympthetically." The chief executive, moreover, must not only be prepared to speak an idea and back it. He must live it himself and devote the same effort to it as he expected from his subordinates.

Selection was the most difficult task of all and Col. Urwick was convinced that future leaders would have to be selected at a much younger age than is the custom at present. American industry had in fact been doing this for some time; they had been recruiting large numbers of graduate technicians—because of their immediate utility to be sure. But these men had also constituted a reservoir of educated men from which many executives had been drawn.

At this point, Col. Urwick attacked the trades unions' idea of a promotion policy which he described as "a moderate amount of advancement for the maximum number of people with an overwhelming emphasis on seniority as the principle of selection."

"It is a suicidal policy," he concluded. "If our undertakings, whether governmental or business, are to be well led in the future, we have got to select potential leaders young and groom them for the job. As Hollywood put it succinctly a good many years ago 'You cannot groom elderly spinsters for stardom'."

Executives Relax

WHEN speeches are made about the need for close association between the universities and industry, one growing form of association is sometimes overlooked. More and more firms and business organisations are making arrangements to use the colleges of Oxford, Cambridge and other universities for conferences during the vacation. This not only helps the college funds, but it also provides a pleasant atmosphere in which businessmen accustomed to a life of bustle and snap decisions may relax, reflect and get to know each other better.

Typical of this development is a recent conference held at Wadham College, Oxford, by the *Brush Group*. More than fifty directors and senior sales executives attended, of whom twenty came from abroad—from countries as far apart as Mexico and Australia. **(Business,** 5/54.)

Clergy At Work

AN interesting project—instituting the office of part-time "Works Chaplains"—has been adopted at the *Northern Aluminium Co.*, Banbury. Every Thursday, for an hour-and-a-half in the morning and a similar period in the afternoon, a clergyman from one or other of the local churches is in attendance at the works to offer advice and guidance to employees. Altogether four clergymen of different denominations are taking part in the scheme.

"Suggestion Duty"

A NEW twist to suggestion schemes is being given at the Birmingham works of *Aldis Bros. Ltd.*, Hall Green, where executives are taking it in turn to be on "suggestion duty" two nights a week, when operators can approach them to discuss any ideas they have for the improvement of the factory and its production processes.

The management is trying the experiment in the hope and belief that it will produce better results than a system which involves filling in suggestion forms and dropping them in a suggestion box. They believe too, that the new system will encourage team spirit. Awards are made for accepted suggestions and a special award is granted for the best suggestion of the year.

Fire-Fighting Show

A LARGE party of business executives were present at a recent comprehensive fire-fighting demonstration held at the works of *The Pyrene Co. Ltd.*, Brentford. In all, fourteen fire extinguishing tests were conducted, including burning petrol in a pail, laying and igniting a 30 ft. trail of petrol along the ground, firing trays of inflammable liquids, and a fire in a test chamber (in the form of a model

A BRIGHT NEW FACTORY

This new factory built by **Saniguard Appliances Ltd.** at Hainault, Essex, could well serve as a model for units of a similar size. Covering 4,000 sq. ft., the building has been designed to admit the maximum of natural light. Inside, the plant has been laid out to ensure the smoothest possible flow of work.

sub-station) comprising a set of switchgear containing oil and bitumen. The various methods of dealing with different types of fire were realistically demonstrated as was the need to "diagnose" the type of fire before deciding how to deal with it.

New Safety Body

THE formation of the Institution of Industrial Safety Officers has recently been announced. The Institution has a founder membership of 500 executive grade persons engaged in accident prevention in industry. For the past eight years activities similar to those of this new and separate body have been conducted as a Section of The Royal Society for the Prevention of Accidents. The Institution's office is at 52 Grosvenor Gardens, London, S.W.1.

New I.W.S. Films

A NEW series of eight filmstrips is being produced by the Industrial Welfare Society featuring *People and Production*. Human relationships in the industrial production pattern form the basis of the series, which is designed to meet the demand for material to stimulate discussion among higher management groups, specialists and technicians and works committee representatives. The first production—"The Executive Who Wasn't"—is a case study of an overworked executive. This is followed by a second filmstrip, entitled "Work and Welfare," which deals with an imaginary company that provides generous welfare facilities for its employees without obtaining appropriate increases in productivity.

The Older Worker

EMPLOYMENT of the older worker figured prominently on the agenda of the National Joint Advisory Council at their recent quarterly meeting held in London under the chairmanship of the Minister of Labour and National Service (Sir Walter Monckton). The three sides of the Council—representing the British Employers' Confederation, the Trades Union Congress and the nationalised industries—all reported in favour of the First Report of the National Advisory Committee on the Employment of Older Men and Women.

The British Employers' Confederation were in complete agreement with the principles of the Report and are now examining the barriers that exist to the employment of the older worker. The T.U.C. fully supported the two main principles but urged that they should be applied with greater flexibility in accordance with individual circumstances. Indicating their approval of the Report, the nationalised industries state that they have done what is reasonable and practicable to carry out these principles.

PLANNED LIGHTING FOR PLANNERS

The drawing office of Clydebank shipbuilders, **John Brown and Co. Ltd.**, is lit by 130 **Mazda** 5 ft. fluorescent reflector fittings, giving some 26 lumens per sq. ft.

Colour At Work

THE scientific colour scheme in the Huddersfield and Barnsley factories of Brook Motors Ltd. has more than an aesthetic value; it is regarded as an important productivity stimulant and a major factor in preventing accidents.

Green predominates as the basic colour in the factory, being used for lathes, drills and large power tools. Walls and roofs are painted cream. Pillars, other supports and piping are finished in bright aluminium paint.

For the convenience of the operator, all the manually-operated controls on production machines for traversing, feeding, stopping and starting, etc., are painted red and yellow, in vivid contrast to the green of the machine. Colour is used to simplify component sorting during the various stages in motor manufacture. Rotor blocks are painted black, red, blue or white, according to type.

B.R. Cuts Costs

A COMPLETE re-organisation of the marshalling yard facilities at Peterborough has been effected by the Eastern Region of British Railways, with the resultant closing of three yards at an annual saving of £100,000. Efficiency of working has been improved and unproductive shunting of more than 1,200 wagons a day eliminated. Under the new working, it has been found possible to close the Midland and Great Northern line at night, for one turn of duty, between Peterborough and South Lynn.

From The House Magazines . . . . . .

Price Range For Ideas

Under an Employee Suggestion Scheme introduced recently in the Aero Division's Derby factories, employees will receive cash awards, ranging from £1 to £500, for ideas which save time and material in manufacturing operations. The object of the new scheme is to enable the Aero Division to benefit from the vast pool of skill and talent which exists in the Derby factories and, of course, to reward workers for bringing forward money-saving ideas. **(Rolls Royce News, 21/4/54.)**

'Phoning Tests

A THREE-DAY telephone improvement training programme was held at our Woolwich Plant recently following a tele-quiz distributed to all extension users, and a monitoring of the switchboard by a consultant from the *New Jersey Bell Telephone Co.* According to the Company, employees failed most in properly answering the telephone, in answering for another, in leaving the 'phone to obtain information and in transferring calls. High scores were made in offering to call back with further information, in properly terminating a call, in notifying someone when the telephone is left unattended, and in prompt answering of the telephone. A movie, demonstra-

(*Continued on page* 598)

Progress In Industrial Civil Defence

By A. G. H. BREND

Chairman, Society of Industrial Civil Defence Officers

Since the Hydrogen Bomb tests in the Pacific last March, a fierce controversy has flared up over here as to the value of civil defence. The author of this article is chairman of a Society who by no means believe that nothing can be done. On the other hand, they stress that industry cannot content itself with half-measures. Here, then, is a factual review of what has been done to date and an outline of the great task ahead.

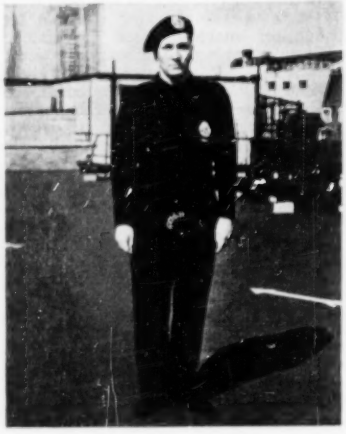
INDUSTRIAL Civil Defence can be said to have commenced in September, 1950 with the formation of the Industrial Panel of the Civil Defence Joint Planning Staff. Up to that time the main concern had been to foster the recruitment of volunteers to the Civil Defence Corps, the Special Constabulary, the Auxiliary Fire Service and the National Hospital Reserve. The purpose of the Industrial Panel was to consider in what way industrial civil defence could be organised to be complementary to and to work in close association with the other Civil Defence Services.

The Panel consisted, in addition to Departmental members, of representatives of the British Employers' Confederation, the Federation of British Industries, the Association of British Chambers of Commerce, the National Union of Manufacturers, the Retail Distributive Trades' Conference, the Trades' Union Congress and Scottish Trades' Union Congress. Nationalised industries were represented by their parent departments whose members on the Civil Defence Joint Planning Staff co-opted representatives of the industries. **It was not desired that industry should depart from the voluntary basis on which the other Civil Defence Services operated, and this meant that from the outset there had to be close consultation with all industrial interests concerned before official action was taken and official directives were issued.**

It will be obvious when one considers the number of associations represented on the Industrial Panel, who themselves were federations of other associations, bodies or unions, that it necessarily took some considerable time to arrive at agreement between all interested parties on matters on which it was desired that there should be general agreement before they were publicised. Perhaps it would not be out of place at this stage to point out that the alternative to this form of consultation and, indeed, to the invitation which has been issued to industry to participate in civil defence, would be the issue of arbitrary orders backed by powers of compulsion, and I do not think that many of those who suggest that Civil Defence in industry should not be taken seriously because it is only an invitation, would welcome orders backed by compulsion.

The first document to be issued as a result of the considerations of the Industrial Panel was *Civil Defence Industrial Bulletin No.* 1, which was published in May, 1951. This document in fact was the first official invitation to industry as a whole to participate in civil defence. It was described as a "Preliminary Memorandum on the Organisation of Civil Defence in Industrial and Commercial Premises," and what it did was to suggest that the premises to which it applied, in general those employing more than 200 employees, should appoint an officer to be responsible for civil defence organisation, should draw up a civil defence scheme and should recruit and train instructors and personnel. *The Bulletin* also suggested a guide as to the possible scale of establishments of industrial civil defence units, dependent on the number of persons employed. Suggestions were made with regard to the sections which should ultimately be comprised in an industrial civil defence unit, guidance was given on control and communications, and authorisation given for the issue of equipment for training purposes. A number of matters including warning systems, shelters and fire were not dealt with, it being indicated in the document that these would be the subject of subsequent bulletins.

Bulletin No. 1 was a distinct step forward, indeed it was the first real step in the establishment of industrial civil defence, and there is no doubt that those managements who accepted the Government's invitation and did all that was required under that Bulletin, were able to find themselves by the time Bulletin No. 2 appeared, with trained personnel and a definite organisation. It is unfortunate that so many managements took none of the steps sug-



Members of the I.C.D.S. are entitled to the standard battledress uniform with their own badge denoting the undertaking to which they belong.

A. G. H. Brend.

gested by this Bulletin and still have not done so.

It is true that where action was taken and an Industrial Civil Defence Officer appointed, it was soon felt that all the information and help which should have been given was not in fact forthcoming, particularly when compared to that being received by Local Authorities. It is a matter of record that, during 1950/51, Civil Defence Circulars to Corps Authorities were being issued at the rate of one per week; the only document received by industry during those two years was *Bulletin No.* 1, and the first Industrial Circular did not, in fact, appear until well into 1952, that being the only Circular for that year.

In addition to this lack of information from the central level there was also in some localities a lack of information from the Local Authorities. It was partly owing to this state of affairs that a number of Industrial Civil Defence Officers formed at the end of 1952 the Society of Industrial Civil Defence Officers, one of the main objects of which was to increase the amount of information available to Industrial C.D.O.'s and the means of distributing and circulating this information.

The next official step forward in industrial civil defence was the announcement in December, 1952 of the formation of the Industrial Civil Defence Service, which was to comprise civil defence units formed in compliance with *Bulletin No.* 1. The Service was not to be part of the Civil Defence Corps, but would train on similar lines to it and operate in close association with it. Members of the I.C.D.S. would be entitled to the standard Battledress Uniform, having their own badge with the name of the undertaking to which they belonged. Details with regard to the I.C.D.S. and its operational organisation in conjunction with the Local Authorities civil defence plans were issued in *Civil Defence Industrial Bulletin No.* 2 which appeared in July, 1953, and it is not inopportune to point out that this *Bulletin* sets out, in fact, the action following the steps which should have been taken under *Bulletin No.* 1. It is still on the voluntary basis but, in view of the operational organisation which it envisages, it does mean that many of those who received *Bulletin No.* 1 will now be expected to take part in industrial civil defence groups with the obligations which such participation will carry.

Up to the time of the issue of *Bulletin No.* 2, that is, July, 1953, no official record had been sought of the numbers of volunteers and recruits in industry, and I think it is true to say that there was a certain amount of surprise when, as a result of this *Bulletin*, the first census was taken and it was found that industry had, without the grant which had been received by Local Authorities, without the large expenditure on publicity which they had incurred, had in fact recruited nearly 150,000 personnel, and I think it is true to say that these figures did not contain any "dead wood."

Although the above figures, as I have said, did cause agreeable surprise, they are nothing like what they should be, and it is believed that the peace-time civil defence establishment of the Industrial Civil Defence Service, i.e., one-third of the war-time establishment, is of the order of half a million, so that industry has a long way to go.

This target is by no means impossible of achievement. If all those to whom *Bulletin No.* 1 was sent, had done everything covered by that *Bulletin* the target would by now be well in sight. The success of civil defence in industry depends not only on the lead which is given by the Government, but on the response of industry. It has been proved beyond all doubt that when the response of industry has been sympathetic and encouraging then recruits have been found. In every case where an Industrial Civil Defence Officer has stated that he finds it impossible to obtain volunteers, it is not the fault of the employees but that they are not encouraged to volunteer, or that obstacles are put in the way of their being released for training, or there is an obvious reluctance to make any payment for this training.

This fact is apparent even in those industries that have a number of installations, where one finds that, where the works manager of a particular installation is keen, then Civil Defence training and organisation is proceeding, but the reverse is the case where the works manager is not keen.

In my view it is not too much to say that, whatever has or has not come from the Home Office, the secret of successful civil defence in industry lies with management's readiness to accept civil defence responsibilities, which includes the releasing of, or paying personnel for training, and I cannot help feeling that I personally should dread to have to accept the responsibility of those who, by refusing to allow civil defence training in their works, factories, etc., now, may be directly contributing to a very heavy death roll if there should be hostilities.

INDUSTRIAL CIVIL DEFENCE (I.C.D.) FACTS AND FIGURES

1. *The I.C.D. Service is still on a voluntary basis, but trains on similar lines to, and operates in close association with, the Civil Defence Corps.*
2. *Some 150,000 people have now volunteered for I.C.D. duties but at least 500,000 are needed to make up the full peace-time establishment.*
3. *For war-time duties it is reckoned that about 1,500,000 men and women would be needed for I.C.D. work.*
4. *The Society of Industrial Civil Defence (S.I.C.D.O.) is now 500 strong and will welcome new members from among those in charge of their firm's civil defence units.*
5. *Success of civil defence in industry depends (a) on the lead given by Government and (b) on the response of industry to that lead.*
6. *The attitude of the works manager to civil defence is a key factor in getting that response.*

Safety Begins with the Man at the Top

By ROBERT McKINNON

This was the conviction expressed by two top executives in their papers to the RoSPA National Industrial Safety Conference at Scarborough from May 14 to 16. If the head of a business was keen about accident prevention, his enthusiasm would spread throughout the whole works.

OVER 650 safety officers, welfare officers and executives from industry in all parts of Britain attended the National Industrial Safety Conference organised by the Royal Society for the Prevention of Accidents at Scarborough during May 14 to May 16. Illness prevented the Society's President, Sir Charles Bartlett, Chairman, *Vauxhall Motors Ltd.*, from attending, but in his absence his address was read by the Director-General of the Society, Maj.-General B. K. Young.

Sir Charles' paper stressed an idea which was supported by other speakers—namely, that an effective safety policy in any works begins with the man at the top.

"Only with the active support of the employers," he said, "can British Industry be made safer and the number of accidents reduced. . . Unless the initiative starts and continues from the top, attempts made lower down can only achieve a modicum of success . . . To be effective, a board should pursue its safety policy with the same vigour as they do their production or sales policy."

Sir Charles thought that Parliament had made a wise decision in rejecting the recent Safety in Employment (Inspection and Safety Organisation) Bill. Voluntary effort, he thought, was more likely to succeed than a strictly statutory set-up although the latter had to be carried as far as was sensible and practicable. In support of his contention, Sir Charles quoted a number of figures. The voluntary system which exists still had reduced the number of industrial accidents by 25 per cent. in twenty-five years—from 30 per 1,300 workers in 1927 to 22.5 per 1,000 in 1952. However, there were 13,000 factories in the country employing fifty or more people so that the 3,225 safety committees now established was only one quarter of the number required. It was plain that the field yet to be ploughed was much larger than the one so far brought under cultivation.

Support for Sir Charles' opinion of the need for "enthusiasm at the top" came from the next speaker, Sir George Earle, C.B.E., Chairman of *The Associated Portland Cement Manufacturers Ltd.* Throughout his paper Sir George emphasised that industrial accidents could be reduced provided that there was enthusiasm for the effort. The lead, he said, must come from the top. "If the head of a business is keen about accident prevention it is practically certain that everybody else will be enthusiastic too."

But enthusiasm would not keep going by itself. It was apt to lie down unless the boiler was well stoked. He considered it the job of RoSPA, of the accident prevention committees and the welfare and safety officers to provide the fuel, and the job of the chief executive is to provide the induced draught.

Sir George quoted the old industrial adage, "where there's muck there's money." He felt sure that a truer saying would be "where there's muck there's accidents." He emphasised the importance of cleanliness and brightness in industrial premises as an aid to accident prevention. He wanted to forget the old days when accidents were looked upon as more or less part and parcel of industrial employment and to create an atmosphere where an acident creates as much alarm and excitement as when we get an outbreak of rabies in this country.

Competitions were urged by Sir George as very valuable means of creating and maintaining interest in accident prevention. In his own company safety competitions are organised between different sections in the works, between all the works in the company and between all the works in the industry. He illustrated the successful results achieved by competitions by stating that in 1927 he had twenty-three works taking part in the competitions and the number of lost time accidents in that year was 868. By 1953 there were twenty-seven works in the competitions but the number of accidents had dropped to 278.

Sir George also touched upon Common Law claims for failure of an employer to fulfil his statutory duties as regards safety and said: "I am in favour of very generous settlements of claims which are justified, but I think the strongest possible fight should be made against the unjustified claims."

The whole matter of the legal duty of the employer to prevent injury to his workers was, however, dealt with at length by a later speaker, L. Bingham, solicitor.

In his paper, Mr. L. Bingham, who has had a very wide experience of dealing with factory

(*Continued on page* 596)

Mr. A. Griffiths, managing director of **F. Perkins Ltd.**, Peterborough, presents a copy of a new safety film **You Can't Be Too Careful** to Mr. H. R. Payne, chairman of the National Industrial Safety Committee of RoSPA, at the Scarborough Conference. The film, which runs for fifteen minutes, was specially made for **F. Perkins Ltd.**

Should Some Problems Be Left to the Workers?

Strange and unexpected things have happened, says DISCUSSION LEADER, when managers and supervisors have asked their subordinates to help them make decisions. Here, we tell of cases where this policy has paid good dividends. Has this been "your" experience also? In any event, we welcome your ideas on this topic and will pay a guinea for each letter published.

AFTER the many letters I have received from you about the supervisor's position within a joint consultative set-up, I thought I would have another look at one of our oldest established committees which is described in Sir Charles Renold's book called *Joint Consultation Over Thirty Years*. This is a history of how formal joint consultation has developed since it was inaugurated at the *Hans Renold Works*, Manchester, thirty years ago. Sir Charles makes it clear that their original conception of joint consultation was that it should take place between the works director and the shop stewards. Relationships of personal confidence and cordiality developed between these individuals "surprisingly early" but this was "at the expense of working relationships on the shop floor." The superintendents and foremen "came to feel that the shop stewards and directors were in league and that those on whom the real burden of supervision fell had been betrayed."

The solution that this firm found contains many stimulating ideas for all of us. A unified management team was built up through a system of *management* consultative committees. This management structure, together with the joint meeting of management and shop stewards, then helped to formulate a system of "common law" binding equally on the management and on the workers. The "repository and custodian" of this "common law" is the employment officer who, in this company, occupies a much more detached position than in many concerns. "He thus acts" as Sir Charles says "as an adviser on either side." Supervision feels secure in the knowledge that top management will support their authority "provided they do not behave in such a way as to make that support impossible." A code of common law, an employment officer on whose advice they can rely and a full knowledge of management policies and decisions have enabled these supervisors to welcome and work with a system of joint consultation.

Dr. Scott in his case study of three Merseyside firms found the same thing. Joint consultation was not very successful because it was not part of the everyday life of the firms. Management did not consult supervisors and supervisors did not consult workers or their representatives as a normal day-to-day practice. Joint consultation in these firms was therefore something apart. It was not part of a wider management philosophy.

A correspondent writes: "There has been a lot of support for the opinion that joint consultation bypasses foremen. I am one of the younger generation of foremen and I should like to see some of the newer methods tried out in our firms. Do you know of some firms where management is trying out new methods?"

Our previous discusions must have sounded a bit pessimistic to this correspondent! There are, of course, firms which are trying out all kinds of new management methods and firms where joint consultation is proving of great value. **But joint consultation is only one aspect of a new and more democratic technique of management.** Strange and unexpected things have happened when managers and supervisors have asked their subordinates to help them to make decisions.

AN INDUSTRIAL MILESTONE

Workers are Consulted

TWENTY-FIVE years ago the pattern of industrial thinking was irrevocably changed by events which took place in a small test room where five girls sat day after day assembling telephone relays. As relay after relay passed down the chute to be electrically recorded as output, vital industrial history was in the making. This group of girls was being treated differently. They were made to feel they were part of an important experiment; they were a group with a purpose—not five factory hands but five people whose wishes and feelings were being taken into consideration. When changes were made their supervisors consulted them; they were closely watched but they said they felt free from constraint. As one of them put it, talking about their supervisor, "He isn't our boss, he's our supervisor." This experiment showed how high morale and output are intimately connected. Absentee figures fell to 1/5th of the girls' former absences and discipline became largely a *group* affair. Output rose steadily in spite of many changes made to working conditions (some changes for the worse) until it reached and stayed at 30 per cent. above its former level. Management was doing things *with* these girls instead of *for and to* them. As a result "there was unleashed" say the authors, "the fullest forces latent in the human personality."

Later, in another factory, a group of girls on a sewing machine operation were asked if they could decide their own target. They suggested that they could manage 90 units an hour (their previous average was 74). Immediately on return to work their output rose to this figure. A control group was asked to improve their output but was not asked to *decide* anything. They promised to try but their output remained the same. Another group was asked by a foreman to set a reasonable figure for scrap. They set a much stiffer figure than he would have dared to suggest and kept to it.

Shortly after the war, a foreman of truckers was worried because one new truck was being delivered to his group and he knew that whoever got it the rest would feel that he had been unfair. He decided to ask the group to settle the problem. In half-an-hour the men had settled it so that everyone had a change of trucks.

Successive office supervisors had given up a problem of discipline as insoluble. Girls insisted on walking round each others' desks when fetching work or leaving the room instead of going down the aisles. Instructions

(*Continued on page* 593)

How to Finance a Housing Scheme For Your Workers

By A. H. HAYNES, F.W.I.

Does your firm lose the skilled labour it needs because of the local housing shortage? If so, the answer could lie in forming an industrial housing association. Here, an expert describes how these can be formed, how they function and how the necessary building funds can be obtained.

A picturesque view of a housing estate built by the **Kingsway Housing Association**, Coppenhall, Staffs.

THE satisfactory housing of employees continues to be not only a major welfare problem for many industrial firms, but also one of the biggest hindrances in the recruitment of staff. There are many firms, however, which have found a partial—if not a total—solution in the formation of housing societies or associations. As an example of what some of these industrial societies have been able to do, the achievements of the *Avon Housing Association* might well be quoted.

Faced with the problem of having to provide houses for employees imported into Grangemouth, Scotland, *B.P. Chemicals Ltd.* and *Scottish Oils Ltd.* formed a housing society under the name of the *Avon Housing Association*. Loans were obtained from the Exchequer and the local authority and, by July, 1952, 160 houses had been erected and occupied. Moreover, because the houses were erected under housing society legislation, it was possible to let them to employees at rents considerably less than would have been charged by private landlords.

Altogether, there are now more than seventy separate industrial housing societies, and there can be no question that their existence and activities are adding both to the productivity of firms and to the happiness and well-being of employees.

Under the amended Housing Act, 1936, a housing society is "a society, body of trustees or company established for the purpose of constructing, improving or managing of facilities or encouraging the construction or improvement of houses." Such a society is a non-profit trading concern and is debarred from the issue of share or loan capital at interest or dividend exceeding the prescribed Treasury rate.

The fact, however, that a housing society operates with benefits similar to those of a local authority, and is thus eligible for subsidies both from the Exchequer and Rate funds, means that a properly constituted housing society can make available houses at a far cheaper rent than can a private individual or firm. The present subsidies are £26 14s. 0d. per house for sixty years from the Exchequer and £8 18s. 0d. per house for a similar period from the local Rate fund; the grant of the latter subsidy is, however, entirely within the discretion of the local authority and may not be payable.

Registration

Registration of a housing association can be either under the Companies Act, 1948, or the Industrial and Provident Societies Acts, 1893-1928. In the former case, it is necessary for a solicitor to draw up the memorandum and articles of association, and for an application to be addressed to the Registrar of Companies.

Because the formation costs are lower and no stamp duty is payable, the more usual method of forming a housing society is to apply to the Registrar of Friendly Societies for registration under the Industrial and Provident Societies Acts. The procedure is simple and model rules, which can be adopted in the form in which they are drawn, are made available on application to the National Federation of Housing Societies.

In the same way as does a local authority, so can a housing society obtain money at low rates of interest on extended repayment terms; the method most normally used of raising capital is to borrow, through the local authority, a mortgage loan of up to 90 per cent. of the valuation. For the remaining 10 per cent., it is usual for the Society to issue loan stock, on which interest is paid; as the shareholders are members of the society, they control its policy. Loan stock may also be issued bearing a fixed rate of interest not exceeding that which has been prescribed by the Treasury.

In the case of industrial housing societies, the firm sponsoring the society will often provide the re-

quired 10 per cent. by taking up loan stock to the value required. **It should be noted, however, that the housing society is a separate legal entity from the firm, and employees are thus given security of tenure of the houses they occupy, whether or not they continue in the firm's employment.**

The Eastern Counties Regional Housing Society provides an interest-example of how such an association can be run. This society, which operates in the areas covered by the counties of Norfolk, Suffolk, Essex, Hertford, Cambridge, Bedford, Huntingdon and the Isle of Ely, was formed to assist small firms in those areas in the provision of houses for key workers and others. It is based on a similar financial structure to that of other housing societies but each member firm agrees to take up interest-free loan stock in the society of an amount equal to the difference between the total estimated cost of the houses required and the amount of the mortgage loan; certain other fees and costs are also payable by member firms to the Society.

The relationship between the Society and the client firms is governed by an agreement and, when terms have been arranged, the Society arranges for the purchase of suitable land, the drawing up of specifications and plans, the engagement of professional assistance, etc. All the work in connection with designs, specifications and tenders is undertaken by the Society and, when the client firm has indicated its agreement with the proposals, the Society applies for the necessary consents, arranges occupation and continues to accept responsibility of management and maintenance.

In view of the fact that a local authority's powers are permissive and not mandatory, it cannot be too strongly emphasised that an essential pre-requisite to the success of a housing society is the building up of cordial and co-operative relationships with the authority. In this connection, interested firms would be well advised to seek information, help and guidance from the National Federation of Housing Societies.

This Federation acts as the central organisation for 570 different housing societies of many types and there is industrial representation on its National Council. Besides issuing many publications and a quarterly bulletin, the Federation will be found to be most helpful in every way. Its address is: National Federation of Housing Societies, 13 Suffolk Street, Pall Mall, London, S.W.1.

An Industrial Housing Association

1. Is a non-profit trading concern which operates with benefits similar to those of a local authority.
2. Hence, it can make houses available at a much cheaper rent than can a private individual or firm.
3. Is a separate legal entity from the firm and employees have thus security of tenure of the houses, whether they continue in the firm's employment or not.
4. Depends, for its success, on good relations with the local authority.

Workers' homes built by the **Avon Housing Association** at Grangemouth for employees of **Scottish Oils Ltd.** and **Petroleum Chemicals Ltd.**, the joint promoters of the Association.

How To Control That Shop Floor Din

(*Continued from page* 575)

Lack of space can be largely neutralised by interposing masonry or other barriers in the path of sound. In the old days, the problem of excessive noise was not so acute because of the low speeds of the machines then in use and also because of the solid structures then typical. Wherever possible, of course, the speeds of modern machines should be kept down, but this is normaliy impracticable since it will reduce production to a similar extent. Much can be done, however, by cushioning any impacts at these high speeds. Helical gears will give less noise, in general, than spur gears. The substitution of a laminated plastic for metal in the manufacture of gears further assists this trend.

Machine Hoods

Barriers have the advantage of reducing not only the noise transmitted through the partition but also of the amount of reverberation in the areas on both sides. A particular case of the use of partitions is in the application of acoustical hoods over particularly noisy machines. Though very effective acoustically, such hoods have the disadvantage that they must cover the working parts of the machine to be effective, yet they must be easily removable for servicing. This latter condition is often not easy to achieve and consequently the use of such hoods is usually restricted to those machines where there is no other solution.

However, modern techniques have enabled heavy structures to be replaced by much lighter ones with very little loss in the noise reducing properties. A typical example of this trend is the use of such materials as glass fibre and acousti-celotex, having a large number of small air cells for sound insulation purposes. Briefly, these cells form a whole series of traps into which the sound penetrates and is then dissipated in vibrating the surface of the minute fibres.

In next month's article, which is the final one of this series, I shall be discussing the problem of noise in offices and also the effects of noise on different types of people.

(*to be concluded*)

UNIVERSITY DIPLOMA FOR PERSONNEL MANAGERS

THE University College of South Wales and Monmouthshire has instituted a one-year course leading to a Diploma in Personnel Management. Set up in response to a demand, both from employers and students, for more intensive training in personnel management, the course is designed for a small group of 8-10 students who will be carefully selected and given much individual attention during their year in Cardiff. Students will be selected by interview and record, and senior personnel managers have promised to help in this work. (Selection, incidentally, will admit the student to membership of the Institute of Personnel Management.)

Those Eligible

Applications will be considered from candidates who are (a) graduates of British Universities; or (b) holders of a social science diploma; or (c) men and women over twenty-four with a satisfactory academic background, who are nominated by their company to take the course, or who may wish to enrol on their own initiative. Special consideration will be given to older students already in work, who might be released by their employers, provided they can profit from a University course; and all candidates will be expected to have had some commercial or industrial experience before beginning the course.

The subjects in which the candidates will be examined are: Personnel Management, Industrial Relations, General, Social and Industrial Psychology, Elements of English Law—plus *one* of the following: Social Administration, Social Structure or Social Philosophy. The student must also satisfy the examiners in practical work.

Firms in South Wales are co-operating with the College authorities and will provide facilities for visits of observation and periods of practical work in personnel departments. In view of the important changes taking place in the economic structure of South Wales, where a host of new factories covering many industries have been built in recent years, a fascinating field for the study of personnel problems has been opened up. The academic staff, moreover, is to be assisted by personnel officers, trade union and M.o.L. officials and the like.

The closing date for applications is June 15.

Model Factory Opened

SIR BEN LOCKSPEISER, Secretary, Scientific Advisory Council, recently opened the new Allendale Works of *W. Edwards and Co. (London) Ltd.* Situated in the industrial area of Crawley New Town, the factory covers a total area of 100,000 sq. ft.

An outstanding feature of the factory is the small number of upright roof supporting members, rendering a clear open floor area. Sound insulation is provided by suspended ceilings of insulation boarding in the offices. The principle of perforated boards with absorbent glass fibre linings to acoustic partitions has also been utilised. Heating is derived from hot water which is forced at high pressure through radiant heat panels suspended from the ceilings and fluorescent lighting has been installed to give shadow-free illumination at bench and machine working height.

Mr. J. A. Wykes, managing director of **Hoover Ltd.**, breaks the flag above the new sports pavilion which the company have provided in the grounds of their Perivale, Middlesex, factory.

IN BRIEF

THE 6,700 workers at Fort Dunlop have set up a record by working 1,500,000 man hours without losing any time through accidents. *Monsanto Chemicals Ltd.* report a similar achievement from their Newport factory where a safety campaign is going on.

* * *

A comprehensive visual aid service for industrial and educational applications was exhibited in London last month by the *Illustrated Classroom Education Co. Ltd.* The important part played by this method of communication in modern life was stressed by Sir Stephen Tallents in his opening address.

* * *

Since the inception of their scheme for long service recognition in 1945, *Leyland Motors Ltd.*, have presented more than 1,700 certificates to employees with twenty-five or more years' service with the firm. Many of the certificates have been issued to employees who have been with the company for more than forty years. Similar awards have been made to employees who are now serving in the Dominions.

* * *

Industrial protective clothing by *Airguard Ltd.* is prominently featured in a new film, entitled "Man and Boy," produced at Beaconsfield Film Studios. The film, which has a well-known cast including such names as Finlay Currie and Naomi Chance, deals with some present-day problems of industry.

* * *

During March, 1954, the total number of fatal industrial accidents recorded in the United Kingdom was 156. This compares with 123 in the previous month and 176 in March, 1953. The 1953 figure includes a considerably higher fatal accident rate among seamen when the number was fifty-four. Sixty-four of the fatal industrial accidents in March, 1954 occurred in factories and thirty-nine in mines and quarries. Deaths among seamen amounted to thirty-eight.

* * *

STATISTICS in the April issue of the *Ministry of Labour Gazette* reveal that industrial disputes during March resulted in a loss of 170,000 working days. The worst disputes were those t collieries in Durham and Yorkshire and in film laboratories. In the first quarter of 1954 some 427,000 working days were lost, the greatest loss occurring in the coal mining industry. The *Gazette* goes on to say that in March some 690,000 workers received wage increases amounting to approximately £9,360,000.

(Continued on page 596)

HOW WASHING-UP IS MADE SWIFT, EASY AND EFFICIENT

BY R. BURNETT-HUGHES

Much time is lost by canteen staffs through inefficient methods of washing up. Here, a catering expert tells how to take the drudgery out of this task and at the same time ensure that crockery and other utensils emerge really clean and hygienic. Washing up both by hand and machine are discussed and also the best ways of using various cleansing agents.

IN a country where industrial canteens and staff dining-rooms are regularly providing more than 24 million meals every working week, one of the greatest problems is that of employing the most efficient and hygienic facilities and methods for washing up dirty crockery, cutlery and cooking utensils.

With a relatively few canteens these operations are excellently organised; and these are equipped with the most modern, labour-saving appliances and cleansing materials. In the majority of canteens, however, particularly those connected with small works, washing-up is still largely performed by hand, often with the most elementary—and in some cases even primitive—facilities. Such methods are slow, tedious, expensive because of their high labour requirements, and are a prolific source of damages and breakages.

Efficient washing-up in the canteen must serve two prime functions; it must render the cleaned utensils germ-free and clean, and secondly it must be conducted in the simplest, quickest, yet most effective manner.

If the collection of dirty dishes is done in an orderly manner, much valuable time can be saved and many breakages avoided during transit and sorting operations. A waste pan should be made available either in the kitchen or on the collection trolley. The waitresses may then scrape all waste food from crockery and utensils into the pan before stacking them into piles. If the utensils are placed in neat piles according to shape and size, with knives, forks and spoons placed into separate containers, much time can also be saved in the washing-room.

Gone are the days when the dish-washer had to rely solely upon soap and hot water. This method was far from hygienic and, although particles of food were removed from crockery, parts emerged from the water still laden with harmful bacteria. A warm water rinse such as this is patently inadequate and need no longer be adopted, since nowadays there are detergents available which almost entirely or automatically solve the problem of hygiene in the canteen as well as considerably simplifying tasks for the dish-washer.

Cleansing Agents

The main types of cleansing agents marketed for such cleaning purposes are the powder compounds, and the jellies and the liquid detergents. Of these three types, the one recommended for crockery use is the liquid product. It will be found that some scum forms from the use of powdered compounds, whereas liquid detergents normally deposit no such scum, many having a sequestering agent in their make-up causing a softening effect on hard water. Sequestering agents prevent the formation of scum and, although they are an important part of the liquid product, they are rarely found in powder form because these contain insoluble calcium.

When, however, the larger utensils such as potato pans, containers, etc., are being cleaned, powder is definitely effective in view of its adaptability and also its abrasive qualities. Interiors of tea urns can be cleaned successfully by pouring the appropriate quantity of detergent into the urn, followed by a hot water filling which dissolves the powder after initial stirring. This operation should be left until the end of the day's work so that the solution may remain in the urn overnight. The following morning stains in the urn will have vanished. Do not, however, use powder on the exterior of the urn since this may cause a scratched and unsightly surface.

The process of dish-washing varies from canteen to canteen according to the facilities available and the following suggestions are for canteens using the hand method. The glass-ware should be the first to be washed, followed by the sweet dishes, dinner plates, cutlery with the greasiest utensils such as roast and drip tins dealt with last. In the actual washing process, utensils should be first pre-rinsed to remove all waste material not scraped off before. The temperature of the water for the pre-rinsing operation is important and should be between 110-120° F. After rinsing, utensils should be thoroughly washed in the detergent solution and then racked for drying. **This method is for canteens where only a single tank is available and it is important that the temperature of the water should be kept high throughout.**

Canteens having more than one tank would do well to follow out the recommendations made by the Ministry of Food for the two- and three-tank method of dish-washing by hand. As in the single-tank method, food residues are scraped off before washing and the utensils pre-rinsed. These recommendations are summarised as follows:

THE TWO-TANK METHOD

1. Wash in solution containing a suitable detergent, heated to 110-120° F.
2. Immersion of parts for 15 sec. in clean water maintained at a temperature of 170° F., or im-

(*Continued overleaf.*)

This combination Wash-up and Sterilising Sink by **Stott's of Oldham** has an output of 504 9-in. plates per hour, compared with 77 9-in. plates per hour by the ordinary hand-washing, single sink method.

Efficient Washing-Up

(*Continued from previous page*)

mersion in a concentrated solution of a suitable bactericidal substance such as hypochlorite.

THE THREE TANK METHOD

1. Wash in a solution containing a suitable detergent heated to 110-120° F.
2. Rinse utensils in warm water to avoid carry over of washing liquids to the final rinsing stage.
3. Immersion of utensils for 15 sec. in clean water, maintained at a temperature of 170° F., or in a solution of an effective concentration of a suitable bactericidal substance such as hypochlorite.

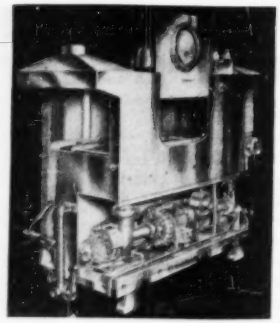
By following the above methods, a high standard of dish-washing hygiene can easily be maintained.

Automatic dish-washing machines are in a class quite apart from hand-washing methods and therefore require more specific attention.

Washing-Up by Machine

Dish-washing with machines has several advantages. Probably the most important of these is the substantial drop in number of breakages sustained, secondly increased speed of operation in washing, and finally fewer staff needed in the canteen. **All these features depend solely on one major factor—adequate instruction for operating staff in the handling of the machine.**

The plate scraping process is the same for machine usage as for hand methods, and is particularly necessary after fish has been served because even the smallest fish particles tend to clog up the water sprinklers inside the machine. An important point to remember concerns greasy plates. These should be placed in the machine *at the earliest possible opportunity* since plates holding hardened fats will not be thoroughly



The **Dawson "Deluge"** Model B dishwasher, which has a capacity of 6,000 pieces per hour.

cleaned by the machine and will have to be re-washed by hand.

The procedure for dish-washing is for all plates, cups, etc., to be placed into racks inside the machine. The washing process commences with a preliminary wash at a temperature of 140-145° F. This leaves the utensils thoroughly cleaned. A rinsing follows with water at a temperature of 180-190° F., and finally a second rinse at a temperature close to boiling point, giving a completely germ-free set of crockery and utensils provided in a minimum of time.

The process of drying should complete the work done by the detergents. Best results will be achieved by air-drying which is also by far the most hygienic method and obviates the need for cloth drying. The latter operation should be discouraged because of the inherent dangers of transferring bacteria from cloth to cloth and especially to the utensil being cleaned. Hygienic conditions, therefore, cannot exist if crockery, etc., is dried in this manner except when constant changes of drying cloths are made, which in practice will usually be most inconvenient and uneconomical.

4 HINTS ON WASHING-UP

1. *Good washing-up begins with orderly collection and stacking.*
2. *Use liquid detergents for crockery and cutlery, and powder detergents for larger utensils on which abrasive action is required.*
3. *Glass-ware should be washed first, then sweet dishes, dinner plates and cutlery in that order.*
4. *Where machines are used, see that the staff is properly trained to operate them.*

CANTEEN ADVICE BUREAU

By L. BANHAM, A.R.San.I., A.M.H.C.I.

Could you recommend a recipe book for use in our canteen?—E. J., Runcorn.

THE selection of a suitable recipe book for use in a canteen depends to a large extent on the amount of money that can be spent on food per meal and on the efficiency of the cooks who prepare the dishes. It is of no value to recommend a book which contains technical terms, such as mirepoix, concasse and the like, if the cook who uses the recipes does not fully understand what they mean.

One of the books which can safely be recommended to any canteen, however, is: "Canteen Recipes," published by the Industrial Welfare Society, 48 Bryanston Square, London, W.1, price 7s. 6d.

It frequently happens that the local reference library has a few books in stock dealing with large-scale recipes. I suggest that you might ask to borrow "Canteen Cookery," by Jack Hampton, published by Practical Press Ltd., 1 Dorset Buildings, Salisbury Square, E.C.4, price 9s. 6d.

Again, the Ministry of Food publications: "A.B.C. of Fish Cookery," price 6d., "Vegetables and Salads," price 6d., "Cakes, Puddings, Biscuits and Scones," price 3d., are useful reference works. Certain firms such as Thomas Hedley and Co. Ltd., Research Bakery Department, Trafford Park, Manchester, publish a monthly Bulletin (free) containing recipes.

I should be very pleased to forward recipes for any particular dish you would like to serve in your canteen.

How can we determine the energy value of the meals served in our canteen?—D. S., Slough.

THE energy value of foods is expressed in calories and the figure representing the caloric value of any foodstuff is arrived at by multiplying the protein content and the carbohydrate content by four and the fat content by nine. An example will make this clear:

The composition of 1 oz. of cheddar type cheese shows the following:

Protein	... ...	7.1 grammes
Fat	... ...	9.8 ,,
Carbohydrate	...	Nil

On multiplying the protein content by four we get 28.4. On multiplying the fat content by nine we get 88.2. These two figures taken together add to 117 calories to the nearest whole number.

The Medical Research Council publications *Nutritive Value of War-time Foods*, 1945, (H.M.S.O. London) and *Chemical Composition of Foods*, (McCance and Widdowson) 1946, provide tables showing the analyses both for the "edible portion" and the "as purchased portion" of a wide range of foodstuffs.

In 1951, the Ministry of Education published a *Ready Reckoner of Food Values*, (H.M.S.O., London), price 2s. This book was originally intended for the use of school meals organisers who wished to have available for their reference a set of food analysis tables suitable for large-scale catering. The analyses given in this book are for foods "as purchased".

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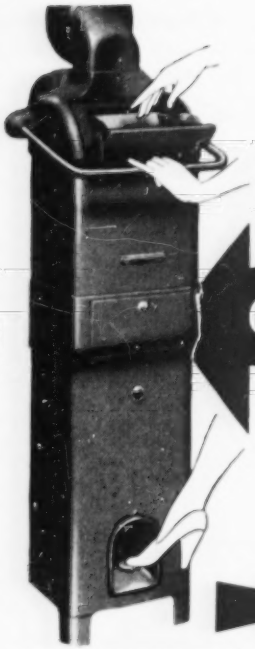

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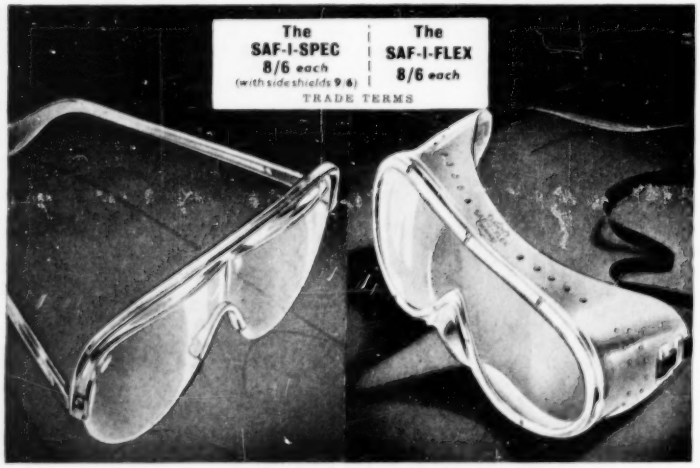

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MANUFACTURERS OF INDUSTRIAL SAFETY EQUIPMENT

New Industrial Equipment

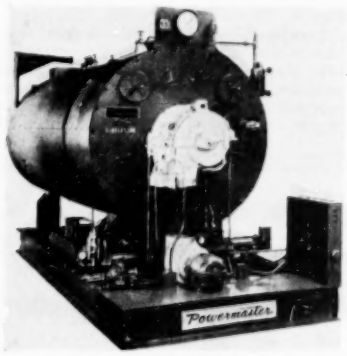
EXECUTIVES' SURVEY OF AIDS TO INCREASED PRODUCTION

Readers who wish to know the suppliers of any of the products referred to in this section are asked to write to the Editor, quoting the reference number which appears at the end of the paragraph. We are always glad to consider for publication descriptions—preferably accompanied by an illustration suitable for reproduction—of new products.

Heating

AUTOMATIC BOILER

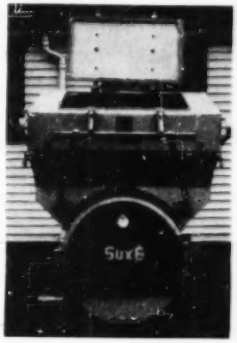
THIS new *Powermaster* oil- or gas-fired boiler, on show for the first time at last month's B.I.F., is claimed to be the first completely self-contained, packaged boiler of its type available in this country. There is a wide range of sizes ranging from Model 15 giving 517 lb. of steam per hour or 502,125 B.T.U.'s/hr. for hot water, up to Model 500 with an output of 17,250 lb. per hour or 16,737,500 B.T.U.'s/hr. *Powermasters* are supplied ready interpiped and interwired and no special foundations nor chimney stacks are needed. Operational efficiencies in excess of 80 per cent. are



obtained with full range combustion modulation control. It is fully automatic in operation and also, say the makers, entirely smoke-free. **(PM/785.)**

AUTOMATIC HEATING

THIS coke-fired burner for which is claimed greater efficiency for much less fuel is in three separate parts: water-cooled furnace, fuel hopper, and electric fan. The cylinder, with a series of protected air inlets in the fire bed, is shaped to allow fuel to enter from both sides along both sides of the fire bed, giving even fuelling and the formation of a single piece of clinkering which can be easily removed. The water-cooled system is said to reduce heat losses from radiation to a minimum. Air is supplied to the burner via a forced thermostatically controlled draught fan which is the only moving part. The fan controls the heating of the water and the temperature of the water controls the fan. The burner is

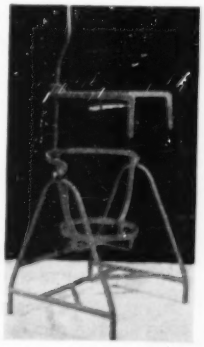


complete and automatic and is said to need attention only twice every twenty-four hours. It can be fitted to almost any type of central heating system and can supply hot water as required. **(PM/786.)**

Safety

TILT WITHOUT RISK

THIS new *"Safe-Way"* carboy tilter is said to provide the following advantages over existing types; the sliding clamp rests firmly upon the top of the glass bottle (from which it is insulated by heavy gauge rubber tubing) and the clamp does not touch the iron skip or hamper at all. By this means the usual metal ring surrounding



the neck of the bottle (which so often corrodes, and may cause fracture of the glass neck during cold weather) is done away with. Thus there is also uninterrupted access to the neck of the bottle when pouring (so reducing danger of spilling.) In addition, the usual chain or hinged bar across the front of the carboy is dispensed with as unnecessary. **(PM/787.)**

SIGHTLY PROTECTION

THE makers of these new safety spectacles first produced them for *Messrs. Hoover Ltd.* who believed that their workers would have less objection to wearing safety spectacles if these were not noticeably different from ordinary spectacles. The result is that *Hoover* employees are now asking for

these spectacles. They are manufactured in clear plastic material with metal curl temples which are covered with hygienic plastic tubing. They have pad bridges and are glazed with *Triplex* safety lenses. **(PM/788.)**

Lighting

NEW DIFFUSION SYSTEM

A NEW system of diffused overhead lighting is said to assure indoor lighting comparable with daylight and to be easy and economic to install and maintain. The diffusion unit is suspended in panels over the whole ceiling and the light passes freely through the panels vertically—but progressively more and more light is cut off until the point at which the line of vision is less than 45° to the diffusion panel when no source of light can be seen. The panels are made from continuous strips of thin plastic coated aluminium, rigid and non-inflammable and can be sprayed in any of four colours to individual choice. The overall pattern of

the panels is a series of waves or curves in regular rows which is claimed, incidentally to be an excellent means of concealing unsightly roof structures. **(PM/789)**

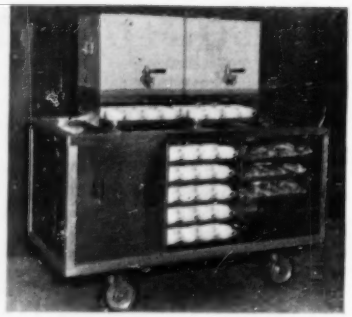
Canteen

CLEANER CUPS

A NEW cup-scrubber is claimed to ensure clean cups completely free from stains or dirty marks, without hours of work or the use of abrasives which can quickly destroy the glazed surface. The capacity of this machine is said to be approximately 600 cups an hour and the brushes are of nylon with wooden backing. The dimensions are 2 ft. 8 in. high by 1 ft. 0 in. dia. and is finished with a stove-enamelled body, with black plasticised washing bowl. **(PM/790.)**

DUAL-PURPOSE TROLLEY

THIS new dual-purpose trolley is claimed to simplify the task of serving quickly large numbers of staff in factories and offices with tea and snacks. It can afterwards be converted to a clearing-away trolley. The main body of the trolley is in light anodised metal, and large castors make it mobile and easy to manœuvre. When in use as a tea trolley, it can carry two 5- or 6-gal. thermal urns and up to 240 mugs or cups. The urns rest on a removable rack to give extra space when the trolley is doing a clearing job



and a removable refuse container is fitted to take waste food through a slot in the top. When unladen, the trolley weighs 190 lb. and can be stripped down completely for cleaning. **(PM/791)**

NEW FOOD SLICERS

NOW on the market are two new food slicing machines: one for use in the small canteen with little kitchen space, and the other a machine which needs no clamps because of its gravity feed.

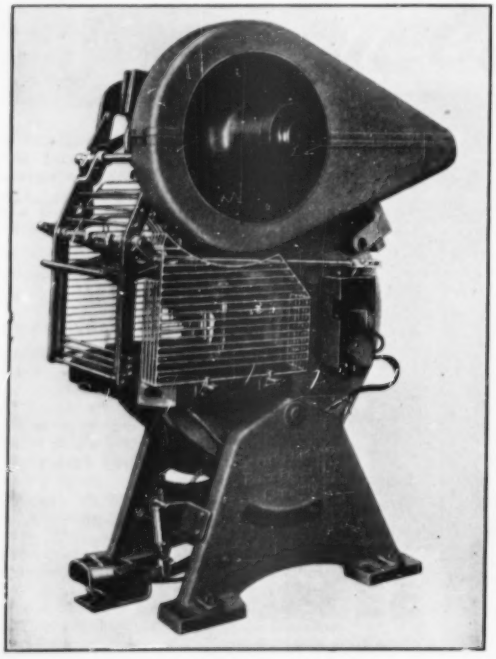
The first machine is designed so that the runner bars are concealed and bits and pieces cannot lodge. Some of the advantages claimed are, that it needs no dismantling for cleaning, easy adjustment for thickness, automatic grinding and resharpening. The blade is of Sheffield stainless steel and the table area required is 5 sq. ft.

The second machine can be used for cold or hot meats, salads, bread, vegetables, etc., and has an unobstructed slice delivery. The auto-twin grinders are fitted below the blade thus eliminating the possibility of grit, etc., soiling the goods. The thickness of slices can vary up to ¾ in. and the machine is said to be light and easy to use. **(PM/792.)**

Hygiene

NEW BLEACH AND STAIN REMOVER

NOW available is a new bleach claimed to restore white articles that have become discoloured, and which can be used safely on all fabrics even the most delicate. The powder is dissolved in warm water, the articles are immersed in the solution for a period and then rinsed in clear warm water. Apart from its bleaching action, this product is also said to remove stains and blemishes from white fabrics. Sprinkled dry on the hands and rubbed with a little water, the makers say it will remove vegetable, fruit and ink stains. It is available in air-sealed aluminium tins and will soon be produced in larger screw-cap containers. **(PM/793.)**



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THESE paper towels are supplied in interfolded sheets and continuous rolls. The rolls are dispensed through a metal cabinet which is fitted with a controlled delivery action, releasing only one section of paper towelling at a time and therefore eliminating waste. These towels are said to be highly absorbent and, as a result the wet strength quality becomes stronger than when dry. As a result, they do not disintegrate. **(PM/794.)**

Efficiency Aids

CORNER DRILL

AMONG new pneumatic tools now on the market is this powerful corner drill and a corner nutrunner made by the same firm. The corner drill is stated to be capable of drilling $\frac{1}{16}$ in. dia holes in steel to within $\frac{1}{32}$ in. of the inside face of a right angle. **(PM/795.)**

MOBILE STORING

THIS new system of storage consists of layers of mobile rack units with the first layer fixed to the wall and the next rows fitted on floor tracks. One unit in each row is omitted to form a gangway to each bay and each unit can be pushed aside to allow access to the row behind. Only one gangway is required and this gives more storage room in a small space. To eliminate the possible danger of handcrushing, rubber buffers are fitted to each unit. Grease-packed ball-bearing wheels are fitted for easy movement and it is said that a girl can move a normal load with no great effort. The units are made in all sizes and existing fixed shelving can be converted if required. **(PM/796.)**

NEW PROFILOSCOPE

DESIGNED for the British Iron and Steel Research Association, this new diamond die profiloscope operates on the same principle as the Association's existing instrument and extends

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Advertise in the classified columns of the DAILY HERALD. Employers all over the country use this medium for finding *skilled* replacements for every trade and craft. They know that of its 5,400,000 readers MORE THAN HALF are in skilled occupations. The following are typical DAILY HERALD reader groups:

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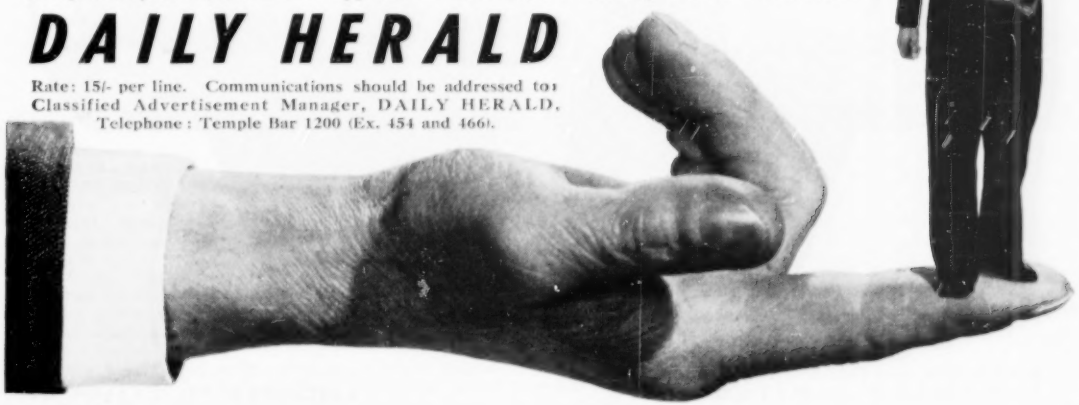
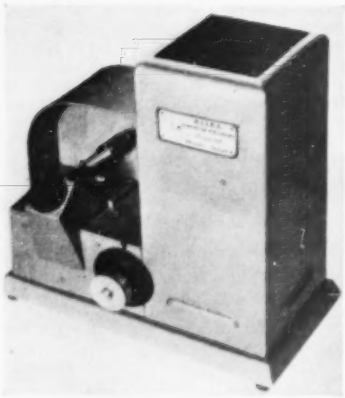




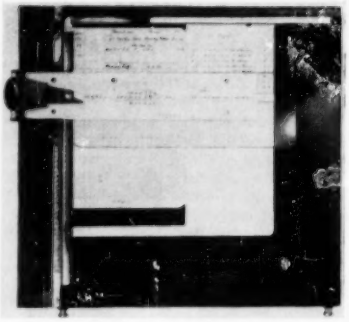
its range of application down to 0.002 in. Both instruments are based on the principle of a narrowly divergent light beam being passed through the die to be examined. The control knob on the front of the profiloscope serves to rotate the front-silvered mirror, thereby causing the beam to strike the die obliquely. This has a three-fold effect. It intensifies the pattern of the image, extends it to cover the sizing portion and the back relief and, by distorting the annulus, makes possible very simple measurement of the die angle. The scale on the control knob is calibrated in 30-minute intervals and is stated to be easily read by an unskilled operator. **(PM/797.)**

EASIER CLERKING

THIS machine is designed to produce by hand posting method, all the results achieved by a mechanical accounting machine, with the exception of the machine computations. The writing surface is of solid aluminium plate, anodised black, and perfect carbon copies are produced with a ball point pen and the correct grade of carbon paper. There are two paper grippers, one on the left-hand side, and one at the top, which are opened and closed by two pull-push knobs at the front end of the machine.

The top paper gripper holds wages sheets, proof sheets and the like, together with the necessary carbon sheets, which remain in position until the end of a run of postings. The side gripper holds earnings record card, statement, ledger card, etc., which lines up with the correlated forms and rests on the machine usually for one entry only.

On the left of the machine there is a carriage which is movable to and from the operator, and fixed to this carriage there is a magazine running beneath the writing surface. In this magazine forms such as carbon backed pay slips, receipts and the like can be stored in continuous packs of 200, and fed



through to the writing surface in such a manner that the writing line is automatically registered with the other correlated forms in the set. Pulling a lever in front of the carriage brings the writing line down one space. Depressing a button above the carriage frees the carriage movement for return to the top or any other desired position.

A slotted transparent writing shield locked on to the moving carriage, is provided with two upright pegs on to which the continuous forms are located for exact registration

The machine can be used for a variety of office work, including receipting, payments, sales ledger, bought ledger and P.A.Y.E. calculations. The illustration shows it in use for P.A.Y.E. **(PM/798.)**

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LEICESTER TEL. GRANBY 471

SHOULD WORKERS MAKE DECISIONS?

(Continued from page 581)

had no effect. A new office supervisor called the girls together in a series of meetings and asked them to solve the problem. They all said what a nuisance it was to have people pushing past them when they were working. They decided voluntarily to use the aisles in future. The group brought effective pressure to bear on one dissenter and the practice of using the aisles was established from that day.

This growing body of evidence suggests that groups will respond if their leader asks them to solve concrete problems. Have you any experience of this? There is evidence that other leadership factors are involved as well—but more of that later. I hope that this will cheer my correspondent up and that he will write to me again.

Another reader writes: "Can any fellow supervisor or Discussion Leader help me with a difficulty? Two charge hands from another department have recently been appointed to be foremen in my department. The work we do is semi-skilled. I suggested to these newcomers that they should learn to do the actual jobs and offered to pay them and the instructress overtime if they were too busy during working hours. I have repeatedly reminded them but so far they have not learned one job. Must I now issue a direct instruction"?

DISCUSSION LEADER

Management Bookshelf

Management Education in American Business by **Lyndall F. Urwick** (*Messrs. Bailey Bros. and Swinfen Ltd., price* 12s.)

IN this recently-released report, the author gives the findings of a nation-wide survey of what American business is doing to develop future managers. The survey was sponsored by the Fund for Adult Education of the Ford Foundation and was organised by the American Management Association. The findings of the report are supported by three factual studies and may be summarised as follows: (1) Formal schemes for developing management personnel have become a *sine qua non* with the more progressive corporations in the U.S.A. industry. (2) The widening gap between the demand for and supply of competent executives—Colonel Urwick points out—is marked by a sense of urgency. As a result, presidents or other senior officers "turn the heat on" in a drive for quick results—a pressure which often leads to ill-judged action and disappointment. There is a tendency to concentrate on the immediate necessity and to ignore the long-term problems. (3) The author advocates that candidates should be picked in their early twenties and that something like four times as many should be selected for training as there are responsible posts to fill. Nevertheless, the door must never be closed on the person who develops later in life. Occasionally an outsider has to be brought in, but the essence of management development is to encourage promotion from within an organisation.

In a sense, the new volume is a complement to *Education for Management*, the productivity report which dealt with what universities and other educational bodies in the United States were doing in this field. The present report describes what business is doing, and Colonel Urwick was chosen to direct the survey on the ground that he was entirely impartial and unconnected with any of the American interests concerned. More than 2,500 firms were contacted by postal questionnaire or field visit. It was found that 30 per cent. of the 1,954 firms contacted by postal survey and 48 per cent. of those interviewed by field survey were operating management development schemes.

Students' Vade Mecum

Management Notebook I. Edited by **Dr. Arthur Roberts** (*Newman Neame Ltd.*, 42s.)

EMPLOYING the same form of presentation as its predecessor—*Supervisory Management Notebook*—Newman Neame's new *Management Notebook I* is a combination of text and notebook designed to encourage the management student to make notes in class, on the job and during his reading. Scheduled for publication in the Autumn, this book is the first part of a two-volume work covering the joint Ministry of Education and B.I.M. syllabus for Management Studies, and deals with the nine subjects included in the three-year requirements for the Intermediate Certificate.

Each of the following sections has been prepared by one of the leading authorities on the subject concerned: Evolution of Modern Industrial Organisation and Management; Nature of Management; Economic Aspects of Industry and Commerce; Legal Aspects of Industry and Commerce; Psychological Aspects of Industry and Commerce; Accounting and Cost Accounting; Statistical Method; Work Measurement and Incentives; Office Organisation and Method.

The book has 200 pages of text and is illustrated with thirty-two pages of coloured charts and diagrams, while a loose-leaf format allows for the insertion of extra pages for notetaking.

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Summary of Official Publications

READERS' GUIDE TO ACTS, STATUTORY ORDERS, NEW RULINGS AND AWARDS CONCERNING INDUSTRY AND PERSONNEL

STATUTORY INSTRUMENTS

No. 427. The Toy Manufacturing Wages Council (Great Britain) Wages Regulation (Amendment) Order, 1954. Dated April 2, 1954, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945(a). *H.M.S.O.* 3d. (Amends Order Y.49 by increasing the statutory minimum remuneration fixed by that Order.) Operative from April 21, 1954.

No. 514. The Retail Food Trades Wages Council (England and Wales) Wages Regulation (Amendment) Order, 1954. Dated April 22, 1954, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945(a). *H.M.S.O.* 4d. (The first Schedule of this Order amends Order R.F.C.15 by altering the weekly minimum remuneration payable to certain workers in relation to whom the Council operates and by applying to branch shop managers and manageresses and temporary branch shop managers and manageresses certain overtime provisions which did not apply to them before; the second Schedule amends Order R.F.C.4 as amended by R.F.C.15 by: (1) excluding from the provisions of that Order workers who normally work for the employer for less than nine hours in a week; (2) providing for the reduction of the accrued holiday remuneration payable to a worker on the termination of his employment by the amount paid to him in respect of holidays allowed to him for which he had not qualified under the Order; (3) substituting a new provision relating to the method of calculating the length of a period of employment qualifying a worker for an annual holiday or accrued holiday remuneration; and (4) adding a definition of "weeks.") Operative from May 14, 1954.

No. 543. The Paper Box Wages Council (Great Britain) Wages Regulation (Amendment) Order, 1954. Dated April 28, 1954, made by the Minister of Labour and National Service under Section 10 of the Wages Councils Act, 1945(a). *H.M.S.O.* 4d. (Amends Order B.52 by increasing the statutory minimum remuneration fixed by that Order, and altering the definition of "war service.") Operative from May 14, 1954.

No. 545. The Fats and Cheese (Rationing) (Revocation) Order, 1954. Dated April 29, 1954, made by the Minister of Food. *H.M.S.O.* 3d. (This Order removes fats and cheese from the rationing scheme.) Operative from May 9, 1954.

INDUSTRIAL COURT AWARDS

No. 2500. Pilot Officers (Scales of Salary) Claim for Increase. Reference: To determine a difference existing between the Employers' and Employees' sides of the Pilot Officers National Sectional Panel of the National Joint Council for Civil Air Transport on the rates of pay and allowances of Pilot Officers employed by the British Airways Corporation. **Award:** (a) That the following salary scales shall be observed: Second Officer, £955-£1,075; First Officer, £1,205-£1,475; Captain, £1,545-£1,745; Senior Captain (Second Class), £1,800-£2,130; Senior Captain (First Class), £2,395; (b) Officers at present in post shall be assimilated to the new salary scales on the "corresponding points principle"; (c) The operation of these scales shall in no way result in reducing the salary of any officer in post. It was agreed between the parties that the question of daily overseas and travelling allowances was no longer an issue for the Court and no award is made thereon. (26/3/54.)

No. 2501. Medical Laboratory Technicians—Scales of Salary—Claim for Increase. Reference: To determine a difference between the parties arising out of an application for increases in the scales of pay of technicians employed in the laboratories of the Royal Free Hospital School of Medicine. **Award:** The Court ruled that Student Technicians, Junior Technicians, Technicians, Senior Technicians and Chief Technicians in the employ of the Royal Free Hospital School of Medicine shall be paid the rates laid down by Industrial Court Award No. 2456 for the like classes of technicians. (26/3/54.)

No. 2502. The Blast Furnace Industry. Reference: That men employed at blast furnace plants operated by members of the Midland Merchant Blast Furnace Owners' Association should be granted, in lieu of arrangements providing for twelve days holiday with pay and bonus of payment in respect of six statutory holidays, a maximum of eighteen days holidays with pay in each annual period on the same terms as those contained in an agreement (dated March 27, 1952) between the Iron and Steel Trades Employers Association and the National Union of Blastfurnacemen. **Award:** That the employers shall apply to blastfurnacemen in their employ the provisions relating to annual and statutory holidays contained in the current agreement between the Iron and Steel Trades Employers Association and the National Union of Blastfurnacemen. (6/4/54.)

No. 2503. The Lace Furnishings Industry. Reference: Dispute between members of the Scottish Lace Furnishings Manufacturers' Association and workmen in their employ on a union claim that the time rates and fall-back rates for female workers employed by members of the association shall be brought up to the level of the rates for female workers employed by members of the Nottingham Lace Furnishing Manufacturers Association. **Award:** Claim not established. (8/4/54.)

No. 2504. National Health Service. Reference: To determine a difference between the management and staff sides of the Nurses and Midwives Whitley Council in relation to the salaries and allowances of nursing staff, including student nurses and nursing assistants, employed by hospital authorities in mental hospitals and mental deficiency institutions within the National Health Service. **Award:** (1) The existing basic training allowance of Student Nurses shall remain unaltered while proficiency allowances and dependants allowances are increased; (2) Nursing Assistants receive an increased commencing salary for both men and women in Class II, and the existing commencing salaries and maxima of the Class I scale are also increased, with a proviso for up-grading both male and female staff from Class II to Class I; (3) The minimum and maximum scales for grades of trained staff are increased. (9/4/54.)

No. 2505. The Pottery Industry. Reference: Claims made in the proposals of the National Society of Pottery Workers for alterations in wages and conditions of work contained in the Pottery Industry Wages Structure. **Award:** The Court rule that (a) the incentive bonus of 5 per cent. provided for in Clause 1 of Schedule 14 of the current Wages Structure shall be increased to 8½ per cent.; and (b) except as provided above the Court find against the proposals of the National Society of Pottery Workers and award accordingly. (21/4/54.)

No. 2506. The Mastic Asphalt Industry. Reference: To determine a difference existing between the Employers' and Employees' sides of the mastic asphalt industry regarding the anticipated output which would accrue from the addition of a spreader to a four-man gang. **Award:** The Court find that subject to the provision by the employer of such additional plant and/or labour, if any, as the circumstances of any particular operation may properly warrant, the yardage for horizontal work as set out in Rule 7 of the Schedule to the Working Rules for a four-man gang shall be increased by 50 per cent if an additional spreader is added to the gang. (21/4/54.)

No. 2507. Government Industrial Establishments. Reference: That rat catchers employed by the War Office and Ministry of Supply be paid M rate plus 12s. **Award:** Claim established. (30/4/54.)

INDUSTRIAL DISPUTES TRIBUNAL

AWARDS

No. 515. Working Week of Maintenance Craftsmen Employed in the Paper-making and Board-making Industry. Claim: For a shorter working week in respect of maintenance craftsmen, without any reduction in pay. **Award:** (a) That the normal working hours for the day workers shall be reduced from forty-eight per week to forty-five per week, spread over 5½ days, and that the present minimum rates shall be increased by 2d. per hour; (b) that the normal working hours for workers on double-day shifts shall be reduced from forty-six to forty-four per week (averaged over the shift cycle) and that the present minimum rates shall be increased by 1d. per hour; and (c) that the normal working hours for workers on three shifts shall remain, as at present, forty-four per week (averaged over the shift cycle). (1/4/54.)

No. 516. Question as to the Observance of a Specified Holidays With Pay Scheme by a Firm of Builders and Decorators in the Isle of Wight. Claim: Whether the employers should observe the holidays with pay scheme in the building and civil engineering contracting industries. **Award:** That the employers concerned shall observe the recognised terms and conditions of employment in regard to payment for holidays. (1/4/54.)

No. 517. Rates of Wages in the Electrical Contracting Industry. Claim: For a further increase in wages over and above the 2d. per hour increase which became operative from March 15, 1954. **Award:** That the London and provincial rates for journeymen electricians shall be increased a further ½d. per hour as from March 15, 1954. (8/4/54.)

No. 518. Rates of Wages and Conditions of Employment of Workers Employed by a Firm in Kent Engaged in the Production of Certain Food Products. Claim: For rates of wages and conditions of employment as set out in a proposed agreement. **Award:** That the revised basic wage rates as listed below shall apply to the undermentioned workers: Males (Other workers, aged 21 years), £6 5s.; Females: chargehands, £5; Other workers, at 21 years of age, £4 8s.; 20-21, £4 2s.; 19-20, £4; 18-19, £3 12s. 6d.; 17-18, £3 5s.; 16-17, £2 15s.; 15-16, £2 10s. The Tribunal find that the claim as set out in Part B of the Schedule has not been established. (9/4/54.)

519. Rates of Wages of Workers in the Glove Manufacturing Industry. Claim: For an increase

in wages for all workers in the industry. **Award:** That the wages of the male and female workers concerned, both timeworkers and pieceworkers, shall be increased by 5 per cent.; the increase to be applied in the same way as the increase of 5 per cent. granted in March, 1953. (9/4/54.)

No. 520. Application of the Guaranteed Wage Applicable to Piece-workers in the Engineering Industry to Pieceworkers Employed by an Engineering Firm at Their Works at Elswick and Scotswood, Newcastle-upon-Tyne. Claim: Concerning the application to the workers concerned of the guaranteed wage provided for pieceworkers in the engineering industry under the terms of Award No. 470 of the National Arbitration Tribunal. **Award:** The Tribunal rule that the company have correctly applied the terms of the agreed notes issued by the Engineering and Allied Employers National Federation and the National Engineering Joint Trades Movement subsequent to the issue of National Arbitration Tribunal Award No. 470. (9/4/54.)

No. 521. Grading of an Officer Employed by the Leeds Regional Hospital Board. Claim: In regard to the grading which should apply to a particular officer. **Award:** The Tribunal find that the claim has not been established but award that the officer concerned shall be graded in Grade G of the grading structure set out in A.C. Circular No. 17. (15/4/54.)

No. 522. Grading of an Officer Formerly Employed by the Leeds Regional Hospital Board. Claim: Regarding the grading of an officer formerly employed as superintendent at Knaresborough Hospital. **Award:** Claim not established. (15/4/54.)

No. 523. Rates of Wages and Scale of Manning Applicable to the Operation of Certain Specified Photogravure Printing Machines by Certain Firms at Bristol. Claim: Dispute arising in regard to the rates which should apply to machine minders employed on certain specified machines and to the scale of manning for such machines. **Award:** The Tribunal find that a case has been established for the payment to the machine minders concerned of rates of wages higher than those at present in operation and for a scale of manning of the machines in question in excess of the scale which has operated hitherto. On the evidence produced to them the Tribunal are not able, however, to make a definite award on either of these matters. (20/4/54.)

No. 524. Rates of Wages of Workers Employed by a Firm Engaged in the Processing of Vegetables, Fruit and Fruit Juices. Claim: For an increase in wages. **Award:** That the basic hourly rates at present applicable to the male and female workers concerned shall be increased by 1½d. in the case of both day workers and shift workers. (21/4/54.)

No. 525. Claim for Additional Days of Paid Holiday for Certain Workers Employed by an Engineering Firm in Wales. Claim: That supervisors and technicians should receive the same number of additional days of paid holiday as draughtsmen employed by the Company. **Award:** Claim not established. (27/4/54.)

No. 526. Remuneration of Workers Employed on Boiler Scaling and Boiler and Flue Cleaning at Hospitals and Allied Institutions. Claim: That workers employed on boiler scaling and flue cleaning should be paid an additional 6d. per hour or alternatively that payment for such work should be negotiated locally. **Award:** That staff engaged on such work which involves entering boilers shall be paid an additional 3d. per hour when so employed. (29/4/54.)

No. 527. Observance of the Terms and Conditions of Specified Agreement Relating to Annual Holidays with Pay by a Firm Engaged in the Brick Industry in Sussex. Claim: That the employers should observe the terms and conditions of employment relating to annual holidays with pay as laid down in specified agreements in the building brick and allied industries. **Award:** The Tribunal find that the company were not observing the recognised terms and conditions of employment, and rule that these shall be observed. (30/4/54.)

GENERAL

Film Laboratory Dispute: Report of Committee of Investigation. Issued by the Ministry of Labour and National Service on the Committee's investigation into a difference between members of the Film Laboratory Association and Technicolor Ltd., and members of the Association of Cinematograph and Allied Technicians. (13/4/54.)

Civil Service Arbitration Tribunal Award No. 247. Claim: For increased salary scales in London in respect of full-time permanent male and female telephonists. **Award:** (a) The Tribunal rule the adoption of the following scale of pay in respect of full-time female permanent telephonists: at 15-16 years of age, 67s. 6d.; 17, 74s.; 18, 84s.; 19, 96s. 6d.; 20, 109s.; 21, 123s.; 22, 128s.; 23, 131s.; 24, 136s.; 25 (highest age point), 140s.; with two further increments to 145s.; (b) The Tribunal find that the claim in respect of male telephonists has not been established. (24/4/54.)

June Diary for Management

BRITISH INSTITUTE OF MANAGEMENT

1 **London.** Special evening meeting (5.30 p.m.) "Incentive for Management" by Mr. J. F. Lincoln, president, Lincoln Electric Co., U.S.A.

BURTON MANOR

13-25 Course No. 510 on "Supervisory Management."

INDUSTRIAL WELFARE SOCIETY

1 **Newcastle.** "Manual Lifting and Handling."
2 **London** "Working Environment in Factories."
3 **Glasgow.** "Manual Lifting and Handling."
10 & 24 **Leeds.** Progressive course on Human Relations.
10 **London.** Half-day Conference on "The Girl in Industry."
14-25 **London.** Overseas Executive Course.
18-20 **London.** Senior Executive Course.

INSTITUTE OF INDUSTRIAL SUPERVISORS

11-13 **Ilminster.** "Work Study for Supervisory Management."
12-14 **Missenden Abbey.** "Human Relations, Communications and Discipline."

NATIONAL INSTITUTE OF INDUSTRIAL PSYCHOLOGY

14-18 **London.** Part 1 of Course in Selection Methods.
21-25 **Roffey Park.** Residential Course in Joint Consultation.
22-23 **London.** Conference on Selection Methods.
24-25 **London.** Conference on Staff Assessment Procedures.

ROFFEY PARK

14-18 Residential Course for Middle Management on "Human Relations in Industry and Commerce."
21-25 Combined Residential Management Course with N.I.I.P.

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PERSONNEL NEWS BULLETIN (*Continued from page 584*)

MR. C. G. CULLEN, chairman, Bowaters Building Boards Ltd., has retired from the chairmanship of the Building Board Manufacturers' Association after just over nine years' service. He is succeeded by Mr. Cedric Ford, director and secretary of P.I.M. Board Co. Ltd.

MR. PERCY EDWARDS and Mr. C. T. Parkin have been appointed joint managing directors of the Lapointe Machine Tool Co. Ltd.

MISS D. FURNESS has been appointed personnel manager at the departmental store of James Colmer Ltd., Union Street, Bath, Somerset.

MR. C. E. M. GOODRICK, whose appointment to deputy factory manager at Greenford has just been announced by *Glaxo Laboratories Ltd.*, Mr. Goodrick continues as head of the pharmaceutical manufacturing and packing departments.

MR. G. A. F. LAYTON, of Canteen Consultants Ltd., Purley, has been elected chairman of the Industrial and Staff Canteens Section of the Caterers Association of Great Britain. He succeeds Mr. N. Abrahams, of Staff Caterers Ltd.

DR. A. M. McKAY, deputy chief engineer at the Billingham Division of Imperial Chemical Industries Ltd., has been appointed to succeed Mr. C. M. Wright as division personnel director.

New B.I.F. Corps

As from 1955, a new company, British Industries Fair Ltd., will be responsible for the organisation and management of the B.I.F. The Birmingham section of the Fair, however, will continue to be run by the Birmingham Chamber of Commerce as hitherto, but the new company will handle publicity in the United Kingdom and abroad for the Fair as a whole.

Sir Arthur J. G. Smout, has been appointed chairman of the company, the remaining directors being: Mr. W. J. Arris, managing director, Burroughs Adding Machine Co. Ltd.; Mr. C. Kenneth Horne, sales director, Triplex Safety Glass Co Ltd.; Mr. H. N. Hume, chairman, Charterhouse Industrial Development Co. Ltd.; Mr. F. R. B. Whitehouse, chairman and managing director, Warner and Sons Ltd.; and Mr. R. P. S. Bache, managing director, George Salter and Co. Ltd. To ensure continuity of management, Mr. J. L. Reading, at present director of the London Section of the B.I.F., has been appointed general manager of the company.

RoSPA Changes

MR. H. R. PAYNE, first president of the Institution of Industrial Safety Officers, and chairman since its inception of the Industrial Safety Officers Section of RoSPA, relinquished his office at the Annual General Meeting at Scarborough on May 14. Mr. Payne has had a distinguished career in the field of industrial accident prevention, and is chairman of the National Industrial Safety Committee of RoSPA, and also of the Works Safety Committee of the A.B.C.M.

The new president is Mr. A. G. Palmer, Works Regulations Officer, North Thames Gas Board.

Rehabilitation Evidence

THE Committee of Inquiry on the Rehabilitation of Disabled Persons has fixed Wednesday, June 30 as the closing date for receiving written evidence. The Committee, which was set up by the Minister of Labour and National Service, the Minister of Health and the Secretary of State for Scotland under the chairmanship of Lord Piercy, announced in May, 1953, that it was in a position to receive evidence from interested persons and organisations. Memoranda should be addressed to the Joint Secretaries, Committee of Inquiry on the Rehabilitation of Disabled Persons, Ministry of Labour and National Service, 32 St. James's Square, London, S.W.1.

Better Never Than Late

ON April 28, Matthew Emmerson, a fifty-three year old shipyard plater lost a court action for compensation in respect of an eye injury sustained in 1918 when he was an apprentice. The judge at West Hartlepool County Court commented:

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RoSPA Conference Report (*Continued fom page 580*)

law, dealt briefly with the growth of factory legislation and pointed out that the law in the field of accident prevention now works in three ways. The first is to prohibit the use of certain machinery, as in Section 39 of the Factories Act, 1937; the second is to impose duties on the employer by statute, and a penalty for a breach of the duty; and the third, a somewhat more indirect way, to penalise an employer by awarding damages against him to an injured workman for Common Law negligence.

Mr. Bingham dealt individually with the requirement of certain Sections of the Factories Act, and of Regulations made under the Act, and illustrated his points by quoting from a number of Court cases.

Technical Papers

Other papers read at the Conference were of a technical nature. These were *The Safe Use of Electricity* by S. J. Emerson, A.M.I.E.E., *Docks, Wharves and Railway Sidings* by H. W. Brown, O.B.E., F.C.I.S., M.Inst.T., *Dangerous Chemicals In Common Use In Industry* by H. Pirie, M.A., and *Flame Failure Devices On Industrial Gas Equipment* by R. C. Haslock, M.Inst.F.

Exceptionally keen interest was shown both in the Conference proceedings and in the Trade Exhibition of industrial safety equipment where many new products were on view. So far as the Conference was concerned, this was reflected in the number of questions asked after each paper and in the number of discussions these evoked among delegates proper. At the Trade Exhibition, there was always a good attendance—on Friday the 14th, the venue was crowded at midnight—and exhibitors reported many enquiries. The Conference ended with "Question Time" on the morning of the 16th, at which an almost full house quizzed the panel of expert speakers.

Sir George Barnett, H.M. Chief Inspector of Factories, who was to have been chairman for the working sessions of the RoSPA Scarborough Conference, was taken ill suddenly during the night of May 14. At the time of going to press, a hospital report stated that Sir George was comfortable and making progress.

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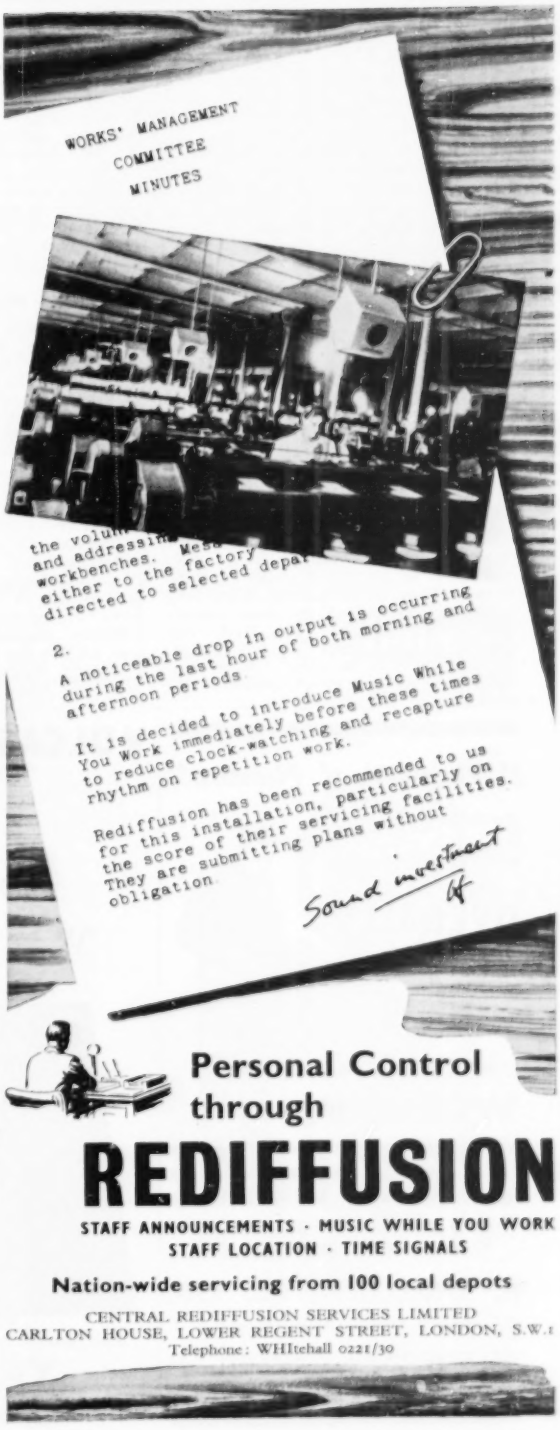
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From The House Magazines . . . (*Continued from page 577*)

tions, lectures and a question-answer period were included in three general sessions with about sixty-five telephone users at each. An executive session for management personnel was also held. Another evaluation is planned for the later part of the year. (**Lipton News,** 2/4/54.)

Safety Conscious

Last year more than 5,000 pairs of safety footwear were sold—approximating at almost one pair per employee. Youths appear to be taking full advantage of the 30 per cent. safety footwear subsidy which is made by the company. Up to the end of last month, 150 pairs of boots had been purchased by young people on the works since the beginning of the year. The subsidy for older people is 20 per cent. (**The Phoenix Magazine,** 4/54.)

Bath Parades

AT Aylesford Paper Mills there is the only Finnish Sauna Bath now operating in this country. It was presented to us by the Finnish Olympic Team of 1948, in recognition of the help we had given and of our close connection with Finland. The bath was opened in June, 1949, by Mr. Wuori, then the Finnish Minister. Since then its popularity has grown steadily and about eighty men use it every week. Monday is ladies' night and there is a regular attendance of up to twenty. The Sauna bath is a particular favourite with athletes who find that it tones them up. It is also very good for those who are suffering from a cold or feeling run down. As the Finns say, "If drink or a Sauna won't cure you, you might as well die"!

(**Papyrus,** Journal of the Reed Paper Group).

Box—Office

In the past, suggestions have been invited from the employees by the installation of a suggestion box in the time office. It is now proposed to increase the scope of the original scheme by inviting the employees of each firm to submit suggestions to improve the efficiency of any of the works of the Group by sending suggestions in writing to the "Group News" office.

The chairman has agreed that a new system of awards will be made for all suggestions of sufficient merit on the following lines: (1) awards of 10s. for all accepted suggestions; (2) supplementary awards of £2 minimum for suggestions of special merit and (3) in addition, annual awards of £20, £10 and £5 for the three best suggestions.

(**Group News,** *Whitehead Iron and Steel Co. Ltd.* 3/54.)

U.S. Films On Loan

A CATALOGUE of 16 mm. industrial films—listing some 149 titles—has recently been introduced by the United States Operations Mission to the United Kingdom in connection with their offer on free loan to all users of such films. These copies may not be purchased, but in the case of very specialised films a Trade Association or other group would be permitted to retain a print on indefinite loan, such copies being subject to recall for use by others.

This scheme is part of the United States Government's offer to those Western European member countries of O.E.E.C. of the use of more than 500 selected American agricultural, productivity and technical training films, a large number of which has already been acquired by H.M. Government. Applications for the loan of these films should be made to the Central Film Library, Government Buildings, Bromyard Avenue, Acton, W.3.

Efficiency Expert: "Mr. Jones, what do you do here?"

Jones: "Nothing."

Efficiency Expert: "And Mr. Martin, what do you do here?"

Martin: "Nothing."

Efficiency Expert: "Hmm. Duplication."

(**Supervision,** *April,* 1954.)

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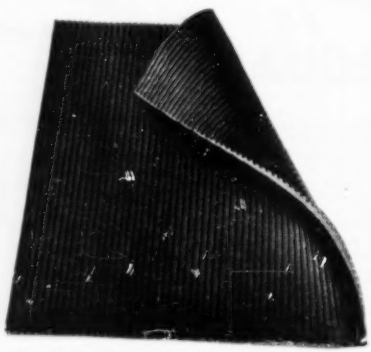

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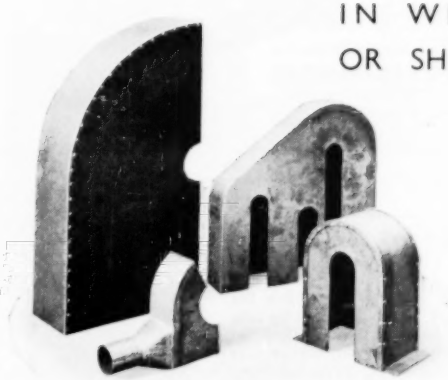

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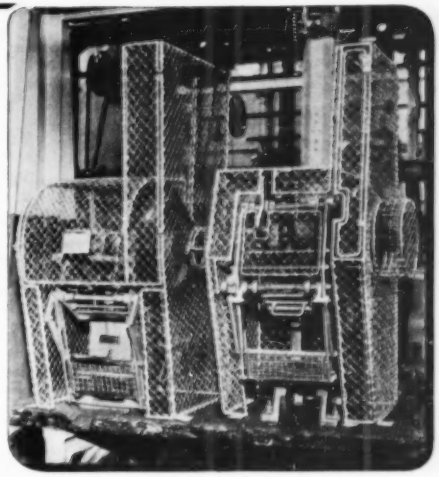

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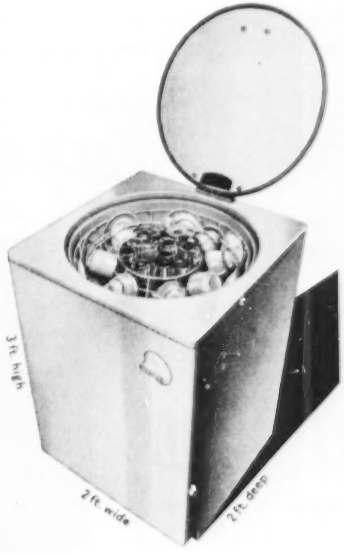

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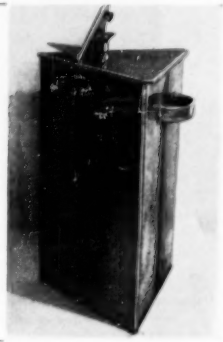

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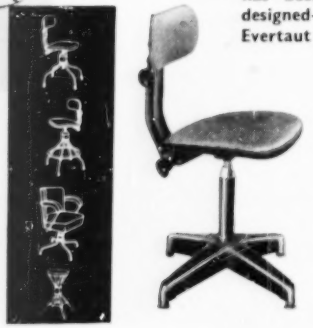

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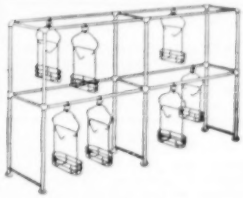

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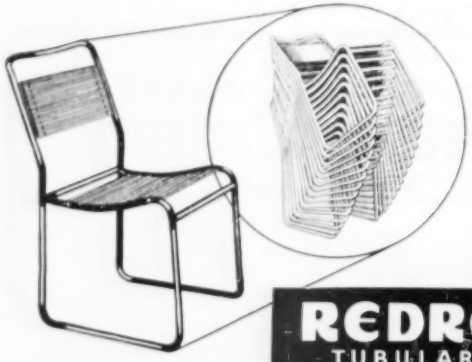

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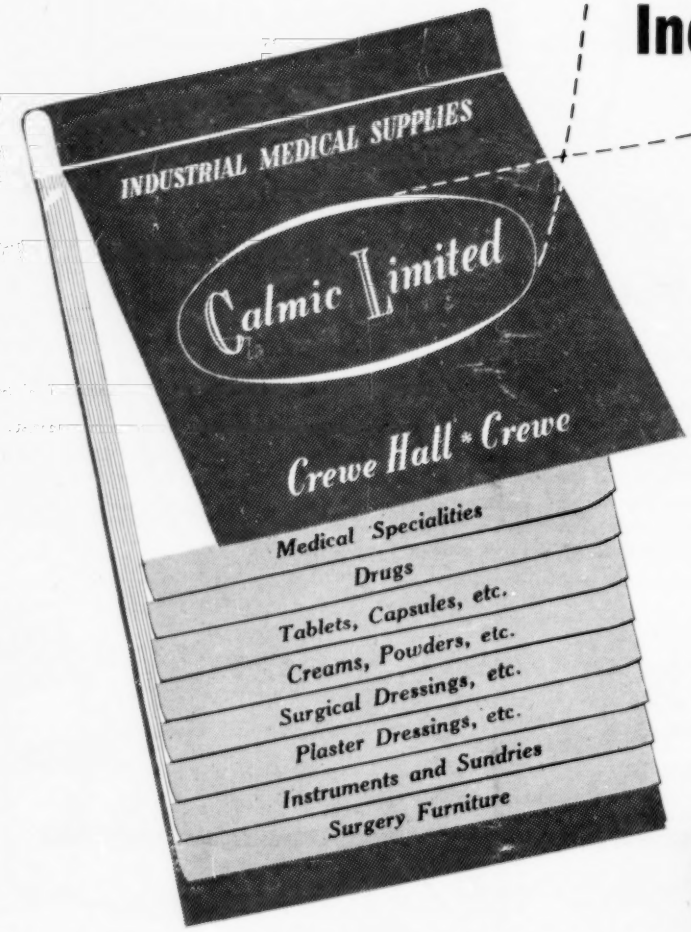

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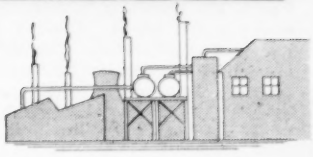

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